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COVER STORY

The cover illustration for this month's issue of the Alberta Naturalist was selected by the Editor from a group of drawings intended for a book-length manuscript in preparation by Kathleen and Ray Salt. The following cover story contains excerpts from that manuscript.

A TYRANNY OF SQUIRRELS

When the author, George Eliot, penned the lines, "Animals are such agreeable friends: they ask no questions, pass no criticism", she obviously had formed no close, meaningful, relationship with Red Squirrels. It's certainly true they don't ask questions; they DEMAND. As for passing criticism - when we decide in the warm weather that their boxes should be emptied and thoroughly cleaned - if that excited, long-drawn-out chatter followed by staccato hic-coughs of sound is not abusive criticism trailing into muttered expletives we'd like to hear a more fitting translation!

Squirrels can be pests to some people. Naturalist-author Kerry Wood just won't put up with them. To others, however, they are the most interesting and lively neighbors to observe, and to woo from the wild state into a master-servant relationship, the squirrels of course being the masters. They'll take over everything, including you. If you are too slow in handing them a peanut they'll run up your body to your shirt pocket and, if they can't get in at the top, they'll try to scratch and gnaw a hole in the bottom where the peanut smell is strongest. The Chickadees feeding on nut-bits in your hand depart hurriedly when a squirrel scrambles up your body to get his share. Bird-lovers quite frequently aren't squirrel-lovers!

Squirrels may pose a problem for birds that nest in cavities. With their chisel-tipped incisors they can enlarge an opening in a few minutes and force entry into a cavity. If there are eggs or small young in the nest they are not averse to a little variety in their usual vegetable diet. Of course the owners of the nest do not

sit idly by and watch the rape of their home and usually the swift attacks of a pair of irate Tree Swallows or a horde of Purple Martins will cause enough confusion and inflict enough minor injury on the marauder to cause his retreat long before he has time to ravage the nest.

Rather than classing them as predators we are inclined to look upon squirrels as competitors for available territorial space. The first spring we acquired our property near a lake we put out a half dozen nest boxes for Tree Swallows and three or four others suitable for Buffleheads or Goldeneyes. Within a couple of weeks two Red Squirrels had laid claim to all the Swallow nest boxes, enlarging the entrances to suit their convenience, and filling them with twigs, grass, and any bits of cloth or yarn they could find. Most of the fringe from the hammock was chewed off to make these homes comfortable and when socks disappeared from the clothesline we knew exactly where to look for them.

But squirrels are native wildlife, interesting and friendly, as well as rogueish and mischievous. They were attracted to our feeders along with other mammals and birds. We had upset the balance of nature on our bit of land; we decided to watch the effects for a few years before disrupting it still further. So, the squirrels are still with us, as well as mice, voles, ground-squirrels, rabbits, weasels, mink, and skunks, and in addition we have a wide variety of birds, in fact, according to many of our neighbours, we have more than our share.

Last year, however, things reached a head! On less than one acre three females produced sixteen active young squirrels (two had two litters). As expected, the families scattered as the young became self-reliant but there was still a great deal of bickering and fighting in August as the most forceful characters, not necessarily the strongest physically, tried to establish winter territories on our property. One young male drove his own mother from the home she had occupied for two years, thus strengthening our lack of faith in the Walt Disney type of animal philosophy. So we live-trapped several red squirrels and scattered them over the adjacent countryside choosing good habitat for their release. Only two squirrels were left last fall, a male and a female. But already this spring interlopers have appeared and we are wondering if, after

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all our careful planning, the squirrels will decide who and what is to reside where.

Perhaps we should be concerned! But then we recall those hot summer afternoons when we relax peacefully in the shade with a good book while a squirrel stretches belly-flat on the cool arm of the lawn-chair beside us. And we marvel that a beautiful wild creature has come to trust us so completely that it too relaxes with us. We will always have squirrels.

W. RAY SALT, RECIPIENT OF SECOND LORAN L. GOULDEN MEMORIAL AWARD

by Martin K. McNicholl
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On 11 January, 1977 Professor W. Ray Salt was awarded the second annual Loran L. Goulden Memorial Award for outstanding work on the natural history of Alberta. This award was given partly for his many outstanding contributions to ornithology in the province, but more as a recognition of the influence in public education and consequent environmental protection that his work has generated.

Ray Salt was born in England on 12 October, 1905, but came to Calgary in 1911 and has remained a resident of Alberta ever since. His family were not wealthy, so he started work at an early age - seven, when he began a paper route in Calgary. He worked at delivering papers until he was 17, and thus was able to enter normal school at the early age of 16. He had a first class teacher's certificate at 17. His entire subsequent education was self-financed.

The first portions of his ornithological career began on his paper route! A customer had a collection of mounted birds, and was instrumental in obtaining a Saturday morning position for his enthusiastic young paper boy helping a Calgary taxidermist skin birds. He and his brother, George Salt, also had a large insect

collection, which they sold to the University of Alberta. Later his bird collections also helped finance his way through university.

At 17, Ray Salt began his teaching career (for which he needed special permission as he was under-age) on the bald prairie at Birdette, Alberta. Here he learned to ride horses, met Kit Foxes, marvelled at Jack Rabbit drives, and most important started to make notes on birds. After two years, he moved to Craigmile, more in the Aspen parkland, where he stayed one year. He then moved to Leslieville, near Rocky Mountain House, and thus in wild bush country. While there, he started a degree in Zoology and Entomology at the University of Alberta, a degree completed over a period of 9 to 10 years, primarily at summer school. This was a time of depression, when scholarships were very rare, and when one could complete a degree only by working full-time at another job, and studying in the summer or at night. Most of these years were spent at Rosebud with his newly acquired wife, Kathleen. Joseph Grinnell, one of the most outstanding ornithologists of all time in North America, with whom Ray Salt exchanged bird skins, attempted to procure a scholarship for him, but was thwarted by U.S. regulations of that time. A similar attempt by Harold H. Bailey to offer Salt a position of museum curator in Virginia was also thwarted. With six courses still needed to complete his degree, Ray Salt quit his teaching post at Rosebud, and worked on five courses (in all of which he excelled), while working for a pittance for Ducks Unlimited, a position obtained through the late William Rowan. The following summer he sold his bird skins to enable him to complete his final course for a much-deserved B. Sc.

His teaching career was about to take a new turn. After teaching two more years in school, this time at Drumheller, he was offered a post teaching zoology at Mount Royal College in Calgary. This lasted two or three years, after which he was tentatively offered a post by the Zoology Department at the University of Alberta in Edmonton. Unfortunately, the position was not then free for a new person, so Professor Salt accepted the offer of a position as Assistant Professor in Anatomy at the same university in 1949. His teaching and administrative talents were quickly recognized - he became Assistant Dean of Medicine the next year! He retired that position after three years but continued as a full Professor until he officially "retired" in 1971. This retirement, now as Professor

Emeritus, still involves a considerable amount of teaching, for which he receives high student ratings.

But all this is not for what he is best known. The attached list of publications on Alberta nature shows that he has contributed substantially to Alberta ornithology. As senior author of three "Birds of Alberta" volumes, he has directly or indirectly aided virtually every recent naturalist in the province. More important is the influence these books have on the raising of public interest in the birds. This in turn colours the views of many towards favouring habitat preservation. His more technical works have also been of great value. Perhaps the most notable is his paper on cloacal protuberance in passerine birds, a universal tool among North American bird banders.

In 1965, Ray Salt built a cabin at Pigeon Lake, where many of his more recent observations have taken place. Much of his next book is based on his work there (see cover story). This work will display Ray Salt, the artist, with many sketches of birds and mammals.

Ray Salt is not by inclination a "joiner", but has encouraged the development of nature organizations in Alberta. M. Offen (1977) wrote in "A letter of appreciation and historical notes" to the Calgary Field Naturalist 8: 199, "In 1946 an advertisement put in the Calgary Herald by Miss Mary Barclay attracted nine or ten people, among them Professor W. Ray Salt as well as myself, and the Calgary Naturalists' Club was born." Although Salt moved to Edmonton shortly thereafter, he continued to encourage the club and its descendents, the Calgary Bird Club, and Calgary Field Naturalists' Club. In Edmonton, he was very active in the Edmonton Bird Club for several years, serving in various posts, including President. He has also served FAN as Chairman of the Alberta Ornithological Records Committee since its inception.

Professor Salt's work has previously been recognized by both the Edmonton Natural History Club and FAN by his appointment to these organizations as an Honourary Member. Ray Salt is generous with both time and money. As Chip Weseloh noted in nominating him for the Loran L. Goulden Award, "Professor Salt's underlying goal in the preparation of each of these volumes has been to get the

books into the hands of as many Albertans, and especially the younger ones, as possible. In attaining this goal he has foregone royalties, to which he was rightly entitled, on all volumes published to date and has worked unceasingly to keep costs to a minimum through governmental publication of his works." Characteristically, this highly suitable candidate for the award donated the cheque back into the fund, writing President Reine, "The framed statement which stands before me at this moment is sufficient reminder of the award. It will always be treasured as a reminder of the honor done to me by your Club and of the very considerate manner in which the Award was presented."

May all subsequent recipients be as deserving!

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OF CHIPMUNKS AND MOUNTAINS

by Don H. Meredith
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A forest trail winds its way among shrubs and deadfall. The steps and rhythmic breathing of the intruder are the only sounds heard. Suddenly, the tranquility is broken by a sharp and startling "chirp twrrl". A diminutive phantom streaks through the underbush, vanishing in a tangle of branches. On investigation, the curious visitor is confronted by a defiant, striped elf with an erect, bottle-brush tail, intently watching from the branch of a tree. The elf scolds with a staccato series of "chip, chip, chip" calls, and then suddenly disappears, a long drawn-out "twr-r-r-rl" trailing through the forest.

Such is the scenario of my most common experience with chipmunks in wild areas. Untrusting, they make quick exits when suddenly confronted by visitors to their domain. However, they are curious and even bold when their escape is assured. In campsites, chipmunks may approach campers for hand-outs, but then quickly retreat to eat or store their booty.

From 1970 through 1974 I had the opportunity to study the movements and behaviour of two species of chipmunks that inhabit the Rocky Mountains of Alberta. I carried out the study as part of my graduate research (Meredith 1974, 1976, 1977) into the apparent competition between the species.

"Competition" is defined by biologists as the demand by two or more organisms for a common resource that is in short supply. Such a resource may be food, nest sites, mates or sufficient cover from weather or predation. If the competition occurs between members of the same species, it is called "intraspecific" competition. If it occurs between members of different species, it is called "interspecific" competition.

So far, research has indicated that both types of competition involve similar processes. Interspecific competition has received

much attention because it may help to explain why and how animals live where they do, and answer the fundamental question: "Why are there so many kinds of plants and animals?" In other words, why are there more than one species of poplar, spruce, finch, hawk, dog or chipmunk? Although this question has not been completely answered (many more questions have been raised), we are gaining insight into the structure and function of biological communities as a result of our attempts to find an answer.

Chipmunks

Chipmunks are small members of the squirrel family. They have furred tails that vary in length from a third to a half of the total length of the animal. Their general body colour varies from gray to dark brown, depending on the species and its habitat. The most distinguishing feature of these squirrels is the presence of dark and light stripes running lengthwise along their backs and the sides of their heads, with a dark stripe running through each eye. These stripes are probably an adaptation to the jumble of branches and rock that make up their habitats. Such stripes break up the general body colour, making it difficult for a predator to discern the silhouette of the body in a mosaic of light and dark shapes. In the west, chipmunks are sometimes confused with the much larger golden-mantled ground squirrel (Spermophilus lateralis) that has a striped back, but lacks stripes on the head.

Chipmunks are endowed with large cheek pouches, which open just inside the mouth. The pouches are used to carry large quantities of material to food caches and burrows. During the late summer and into the fall, chipmunks can be seen scampering about with what appear to be advanced cases of the mumps, but are actually pouches stuffed to capacity with berries, seeds, grasses, mosses and anything else that is edible or will make a good winter bed. This propensity for gathering and keeping stores gave these animals their original genus name, Tamias, which in Greek means "storekeeper". Their common name, "chipmunk", is an anglicized Algonquian name that is probably a reference to the animal's "chip" call.

Like their relatives the ground squirrels (but unlike tree

squirrels), chipmunks go into a form of hibernation to avoid having to cope with the extreme conditions of winter. Unlike ground squirrels, however, chipmunks do not appreciably accumulate fat reserves in preparation for hibernation. They instead hoard large quantities of food in their burrows, and periodically awake from their winter sleep to feed on these stores. Chipmunks also differ from ground squirrels in that chipmunks may not go into hibernation at the same time each year. They only retreat to their burrows when winter conditions are inhospitable. Thus, on warm days as late as November, chipmunks may be observed scurrying about to get last parcels of food into their burrows, while ground squirrels have not been seen for two months or more.

Biologists recognize 16 species of western chipmunks (genus Eutamias) in North America, and only one species of the Eastern Chipmunk (Tamias striatus). The western chipmunks are found from Mexico to the Yukon Territory, inhabiting deserts, forests and alpine tundra. The species differ from one another in slight marking, colour and size variations. Four species of western chipmunk are found in Canada. Three of these are only found in the mountains of British Columbia and Alberta, while the fourth, the Least Chipmunk (Eutamias minimus), ranges from the Yukon and B.C. to Quebec.

The Eastern Chipmunk is found east of the Saskatchewan-Manitoba border and inhabits hardwood forests. It is larger (being about 100 grams) than the western species (varying from 35 to 90 grams). It is placed in a separate genus from the western chipmunks because it has one less tooth in its upper jaw.

.... and Mountains

The western chipmunks have interesting distributions in high mountain ranges. In the Sierra Nevada of California as many as nine different species are found in one east-west transect of the range. These species are altitudinally zoned, each associated with a particular plant life-zone, from lowland sagebush, through several forest zones, to the treeless alpine. One species (Eutamias alpinus) lives solely in the alpine of a restricted region in the Sierras, and is found nowhere else.

In the mountains of British Columbia and Alberta, where there are fewer life-zones, all four species of chipmunk are forest dwelling, except for two races of the Least Chipmunk (Eutamias minimus) which live in the alpine of southeastern B.C. and southwestern Alberta (Soper 1964, Cowan and Guiguet 1965). The ranges of both races are surrounded by forests occupied by a different species, the Yellow-pine Chipmunk (Eutamias amoenus).

The ranges of the Least Chipmunk and the Yellow-pine Chipmunk in Alberta are illustrated in Fig. 1. North of the Bow River the Least Chipmunk occupies the boreal forests and the eastern front ranges of the Rocky Mountains, while the Yellow-pine Chipmunk occupies the forests along the Continental Divide. These populations are not altitudinally zoned but are generally separated by geography, high alpine ridges and peaks forming much of their boundary. South of the Bow River the species are altitudinally zoned, the Least Chipmunk occupying islands of alpine and timberline areas in a sea of forest occupied by the Yellow-pine Chipmunk. This change in distributional patterns at the Bow River presents an interesting problem to those who are interested in biogeography, the study of the distribution of plants and animals.

Most species of plants and animals found in Alberta today have invaded the province since the Wisconsin glaciation (some 10,000 years ago). During that glaciation most of Alberta was covered in ice several thousand feet thick (Steick 1967). As the ice receded, plants and animals invaded the virgin territory and established communities. The ice did not recede from the high mountains as quickly as it did from the plains, and thus communities in B.C. were isolated from those of the plains and boreal forests for a period of time. Eventually the valley glaciers in the mountains also succumbed to the changing climate and many low passes over the Continental Divide were opened and vegetated, allowing the eastern and western floras and faunas to converge. Where similar communities came together, plants and animals that exploited the same resources came into competition.

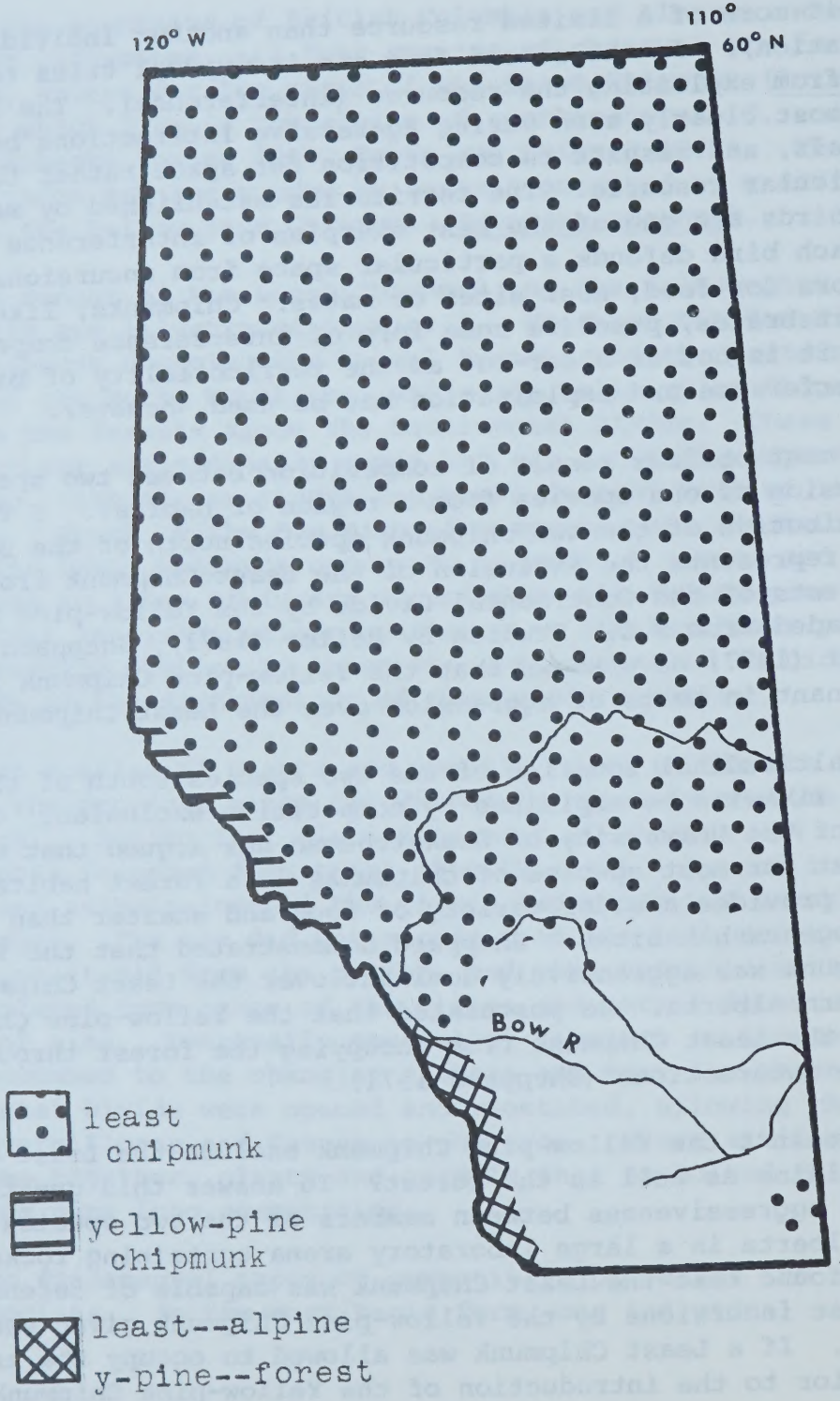
Two fundamental types of competitive processes are recognized by biologists. In the most basic form, one individual simply tries

to exploit more of a limited resource than another individual (exploitation). In the second form one individual tries to prevent another from exploiting the resource (interference). The latter type is most clearly seen during aggressive interactions between individuals, and results in competition for space rather than for any particular resource. The territories established by many species of birds are one of the best examples of interference competition. Each bird defends a particular space from incursions by its competitors for food, nest sites or mates. Chipmunks, like most other vertebrates, practice some form of interference competition, although it is not as clear-cut as the territoriality of birds. Both interference and exploitation may be used, however.

The most obvious result of competition between two species is the exclusion of one species from a region or habitat. I feel that the distribution of the two chipmunk species north of the Bow River (Fig. 1) represents the exclusion of the Least Chipmunk from the moist forests of the Continental Divide by the Yellow-pine Chipmunk, which invaded from B.C. Studies by Heller (1971), Sheppard (1971) and myself (1977) have shown that the Yellow-pine Chipmunk is generally dominant in tests of aggression over the Least Chipmunk.

The altitudinal zonation of the two species south of the Bow River may likewise be explained by competitive exclusion. Dr. David Sheppard of the University of Saskatchewan has argued that the optimum habitat for most species of chipmunks is a forest habitat. Such a habitat provides a wider variety of food and shelter than an alpine or sagebrush habitat. Sheppard demonstrated that the Yellow-pine Chipmunk was aggressively dominant over the Least Chipmunk in southwestern Alberta. He postulated that the Yellow-pine Chipmunk prevented the Least Chipmunk from occupying the forest through aggressive interactions (Sheppard 1971).

Why doesn't the Yellow-pine Chipmunk exclude the Least Chipmunk from the alpine as well as the forest? To answer this question, I tested the aggressiveness between members of the two species from southern Alberta in a large laboratory arena containing rocks and trees. I found that the Least Chipmunk was capable of defending an area against incursions by the Yellow-pine Chipmunk given certain conditions. If a Least Chipmunk was allowed to occupy the arena one day prior to the introduction of the Yellow-pine Chipmunk, the


120° W
110°
60° N
Bow R
49°
least chipmunk
yellow-pine chipmunk
least--alpine
y-pine--forest

Least Chipmunk had a 50-50 chance of dominating the match. Even if it did not dominate the match, the Least Chipmunk would continually harass its opponent, making it difficult for the Yellow-pine Chipmunk to feed or build a nest.

Perhaps the Least Chipmunk occupied southwestern Alberta prior to an invasion by the Yellow-pine Chipmunk. In doing so it occupied both forest and alpine habitats and evolved adaptations to the structure and environments of these habitats (Meredith 1976). When the Yellow-pine Chipmunk invaded southwestern Alberta it was able to exclude the Least Chipmunk from the forests through aggressive encounters because it was likewise adapted to the forest but its aggressiveness gave it a competitive advantage. In the alpine, however, habitat structure is quite different, and the Yellow-pine Chipmunk lost the advantage it had in the forest. Here the Least Chipmunk was able to exclude the Yellow-pine Chipmunk because the Least Chipmunk was defending a familiar habitat that was structurally different from the forest. The Yellow-pine Chipmunk was unable to give chase or find a hiding place in an unfamiliar habitat.

Thus, a scenario of events to explain the distribution of these two chipmunks in Alberta might go something like this:

1) The Least Chipmunk followed the boreal forests into Alberta, as the plains ice sheet receded. This chipmunk then followed the retreat of the valley glaciers into the mountains and occupied the alpine as it became available.

2) The Yellow-pine Chipmunk subsequently invaded Alberta from B.C. and Montana, as low passes were opened over the divides. South of the Bow River the Yellow-pine Chipmunk excluded the Least Chipmunk from the montane forests but not from the alpine. North of the Bow River, the Yellow-pine Chipmunk excluded the Least Chipmunk from the montane forests along the Continental Divide, but not from the forests of the front ranges and plains. Neither species appears to have successfully occupied the alpine (with breeding populations) north of the Bow River.

Why the two species did not become altitudinally zoned north of the Bow River is subject to speculation. Perhaps the Bow Valley separates alpine habitats that are inhospitable to chipmunks (to the

north and east) because of climatic factors related to increasing northern latitude. The Least Chipmunk may be better adapted to northern forest environments (because it was the first to occupy them) than the Yellow-pine Chipmunk, and thus was able to compete successfully there.

These speculations await further studies into the development of present-day flora and fauna in Alberta and western Canada. The timing of regional occupation may prove to be as important to the competitive success of a species as its environmental adaptations.

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Fig. 1. Ranges of the Least and Yellow-pine Chipmunks in Alberta (Soper 1964).

BLACK-CAPPED CHICKADEES MEET NORTHERN SHRIKE - THE DEADLY SILENCE

by Rudi Butot
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One bright winter day, as I sat working at the kitchen table, I could not help but look up from time to time, to admire the six Black-capped Chickadees that gambolled about outside, near the patio. Hither and yon they flitted, from coconut feeder, filled with sunflower seeds and hung in the lilac bushes, over to the spruce trees, or the weeping birch where the suet hung. Talking and scolding as they went. This was the first year that we had had that many chickadees around, and I believed them to be two parents with their young.

No matter how full I filled the coconut feeder with sunflower seeds, by the end of the day it was all gone. I had marvelled at their appetite, until one day I found shelled sunflower seeds wedged into each of the slots of the receptacle for my car's block heater cord. Later, reading some literature on chickadees, I discovered that these little birds like to store food in cracks and crevises in trees, or between spruce needles; presumably for leaner times which might lie ahead.

A flock of House Sparrows also frequented the patio, eating at the feeders filled with wild bird seed. All that fluttering, cheeping and chirping, set off against the sun drenched snow, certainly made the winter seem worth while, for a non-skier. I kept turning back to my work, until finally I only observed the commotion outside as a sort of background of sound and motion.

Suddenly the silence outside was so deadly, as to almost come crashing in on my subconscious. I looked up, somewhat startled, at this sudden realization of total silence, and glanced outside. There, outside in the lilac bush, I saw six little statues, cast in the form of Black-capped Chickadees, mounted as it were as individual pieces of sculpture, sitting frozen in time on the branches.

As I turned my head, I could now also see the sparrows huddled under the spruce trees, and all the birds had their eyes turned upwards, but not one did move.

Puzzled by this absolute immobility of all the birds, I went over to the window, to see what could be causing this strange behaviour. Still not a bird moved, their small, beady, black eyes seemed riveted on something up above. As I looked up, I realized at once what had caused this eery absence of both sound and movement; for there, high up in the weeping birch, sat a Northern Shrike, silently observing the scene below.

I stood at the window, waiting to see what would happen next. Would the shrike swoop down and kill one of the birds? Did it see any of the frozen forms down below? We all remained motionless for what appeared to be well over three or four minutes. Finally the shrike took wing and flew off, possibly inhibited by my presence.

As I returned to my chair, and sat down, the chickadees sprang back to life, and within seconds the scene had returned to what it had been before the interruption. The chickadees returning to the coconut feeder to grab a sunflower seed, to either eat or hide. However, for a long time after, I could still feel the sensation of this, for me, new experience. So strong had been the feeling of fear that I had perceived in the small frozen bird forms, that it left me with the unearthly feeling that I had watched death stalk the winter landscape.

OO-CUT-TUX

by Allen Ronaghan
Box 84
Baldwinton, Saskatchewan SOM OBO

In March of 1973 Peter Fidler made this entry in his journal; "It is stony land here and called so by these Indians Oo-cut-tux ... also passed a great number of very small lakes or rather ponds. The ground very uneven; all small round knolls and vallies."

Anyone familiar with the Viking moraine east of Viking, Alberta, will readily recognize the aptness of Fidler's observations. He was travelling through that part of Alberta with a group of Piegan Indians of the Blackfoot Confederacy.

Fidler was a better recorder of natural history than he realized. Oo-cut-tux is his way of spelling a word that the Piegans used to identify the area. The word has been rendered Okhotoks in south-western Alberta, where the town of Okhotoks got its name from the "big rock" nearby. Readers may remember that residents of the Okhotoks area rallied to the defense of the "big rock" when an oil company proposed to break it up for ballast.

Early settlers in the Viking district soon noticed the "big rock" in the rough country to the east of the town.[1] When Herb Collier published his book Remember When? in the 1930's, he was careful to include a reference to it along with other items of interest to naturalists. My curiosity aroused by the Collier book, I made inquiries and a friend was kind enough to take me to it.

"Oo-cut-tux" is a glacial erratic about twelve feet high standing in a bowl-shaped depression probably made by buffalo rubbing themselves on it in the centuries before settlement (Fig. 1). The University of Alberta geology department described a sample of rock from it as buff dolomite. The rock is deeply weathered along what appear to be lines of sedimentation, and the rock is very nearly split in two on one of these lines.

While large glacial erratics are common enough in south-western Alberta, erratics the size of "Oo-cut-tux" are fairly rare in more easterly parts of the province. Landmarks with Blackfoot names are also rare in eastern Alberta. In my opinion "Oo-cut-tux" should be designated a protected object by the provincial government.

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1. In 28-47-11 w. 4.

Fig. 1. Big Rock, north of Kinsella and east of Viking, Alberta. October, 1957.

FLORA OF WOOLFORD PROVINCIAL PARK

by Keith Shaw
Cardston, Alberta

Woolford Provincial Park lies in the valley of St. Mary River on Part of Section 3 Township 3 Range 24 West of the 4th Meridian in southwest Alberta. The park area of 35 hectares contains flowing river, first terrace gravel bar, second terrace riverbottom forest, third terrace fescue prairie and freshwater pond biotic communities. Elevation is 1,120 meters and the climate is continental. Average annual precipitation and yearly mean temperature for Cardston, six km west, are 46 cm and 5.0 degrees C. Summers are normally warm but winters can be unusually long and cold. Cold winter weather may be modified from time to time by warm chinook winds. The frost-free growing season average to which the native plants have adapted is 100 days. Sunshine totals for the park area are high, ranging from 2,000 hours to 2,350 hours annually, with July being the sunniest month (Canada Dept. Transport, 1969). The light precipitation is somewhat mitigated by 60 to 75 per cent of the yearly total falling during the growing season.

The river valley and the park site have been formed from Upper Cretaceous St. Mary River and Tertiary Willow Creek sedimentary formations and are undergoing constant modification through alluvial degradation and aggradation resulting from the flow patterns of St. Mary River. From late July through autumn and winter the river's flow is fairly constant and moderate. During March, warmer weather causes snow melt from the foothills and lower mountain slopes to increase stream flow. However, the most rapid melting of deep mountain snow occurs from late May through early June. This coincides with the season of highest precipitation, swelling stream flow to its maximum, which can be four to five times the winter flow rate. It is at this time that the greatest alterations to Woolford Park's natural and man-made features occur. Unconsolidated gravels of glacial origin make up the greater part of the valley floor and these are much reworked and sorted by the river.

Soils within the park are of alluvial origin and some, still

liable to frequent flooding, are quite variable in texture, utilization and fertility.

Woolford Park's most appealing features probably are the mature riverbottom forest and the flowing river. The forest owes its existence to the river and ultimate natural destruction of the forest can also be caused by the river. Riverbottom forest is found on streams which have not reached a final static equilibrium, but are still in a state of dynamic equilibrium, constantly adjusting to achieve an approximate balance between work done and load imposed. Inability of the St. Mary River, particularly through Woolford Park, to adjust its width in accordance with velocity has led to the deposition of gravel bars alternately with degraded banks and these are the characteristics of the meander pattern.

Pioneer stands of riverbottom forest can develop only on first terrace gravel bars formed through flood water deposition. If the gravel bar escapes subsequent erosional destruction for several decades, the forest will mature, and as the river cuts deeper into the valley the first terrace becomes a second terrace supporting the climax riverbottom forest community.

Four vegetational strata can be recognized in mature riverbottom forest stands on St. Mary River - (1) mature tree canopy and its reproduction, (2) clumped shrub understory, (3) thicket shrub understory, and (4) herbaceous understory.

Dominant tree species in the canopy are balsam poplar (Populus balsamifera balsamifera and P. b. trichocarpa), and narrowleaf cottonwood (P. augustifolia). Hybrids (P. X balsamifera) between these two species are also very important in the community.

Clumped shrub dominants are river birch (Betula occidentalis), red-osier dogwood (Cornus stolonifera), and yellow willow (Salix lutea).

Thicket shrub dominants are silverberry (Elaeagnus commutata), snowberry (Symphoricarpos occidentalis), wood rose (Rosa woodsii), and serviceberry (Amelanchier alnifolia).

Herbaceous stratum dominants are highly variable from stand to

stand but generally include black medick (Medicago lupulina), golden aster (Chrysopsis villosa), timothy (Phleum pratense), sticky loco weed (Oxytropis viscida), smooth aster (Aster laevis), and strawberry (Fragaria virginiana) (Shaw 1974).

Vascular plants were collected in Woolford Park during the growing seasons of 1974 and 1975. In all, 94 species of plants were collected, but in view of the constantly changing gravel bars and banks, this number, and indeed the species list, can only be tentative. In a more complete study of the total riverbottom forest of St. Mary River (Shaw 1974), 262 species of vascular plants were found.

A complete set of the Woolford Park plants is in the author's personal herbarium at Cardston, and a duplicate set is on deposit with the Provincial Parks Division of the Department of Recreation, Parks and Wildlife in Edmonton.

Thanks are due to the Provincial Parks Division for permission to collect in the park, and to the author's wife, Shirley, for help with the field work. Appreciation also goes to Professor Stanley L. Welsh of the Brigham Young University Herbarium (BRY) for help with some identifications, and to Dr. George Argus of the National Museum of Canada for identification of the willows.

Taxonomy of the reported species follows Moss (1959), except for Populus species which follow Brayshaw (1965). Only presumed naturally occurring or naturalized non-native species are listed. Obvious lawn grasses and cultivated ornamentals are deleted. The list of families, genera and species is arranged in alphabetical order for ease of reference. Common names are provided for those species which are well known.

SPECIES LIST

APOCYNACEAE - DOGBANE FAMILY

Apocynum sibiricum Jacq. Indian Hemp

BETULACEAE - BIRCH FAMILY

Betula occidentalis Hook. River Birch

BORAGINACEAE - BORAGE FAMILY

Lappula echinata Gilib. Blue-bur

CAMPANULACEAE - BLUEBELL FAMILY

Campanual rotundifolia L. Bluebell

CAPRIFOLIACEAE - HONEYSUCKLE FAMILY

Symphoricarpos occidentalis Hook. Buckbrush

CARYOPHYLLACEAE - PINK FAMILY

Cerastium arvense L.

COMPOSITAE - COMPOSITE FAMILY

Achillea millefolium L. subsp. lanulosa (Nutt.) Piper Yarrow

Antennaria parviflora Nutt.

Aster foliaceus Lindl.

Aster laevis L. var. geyeri A. Gray Smooth Aster

Chrysopsis villosa (Pursh) Nutt. Golden Aster

Cirsium arvense (L.) Scop. Canada Thistle

Cirsium undulatum (Nutt.) Spreng.

Erigeron caespitosus Nutt.

Erigeron compositus Pursh var. glabratus Macoun

Erigeron glabellus Nutt. ssp. pubescens (Hook.) Cronq.

Gaillardia aristata Pursh Gaillardia

Grindelia squarrosa (Pursh) Dunal Gumweed

Helianthus nuttallii T. & G. Common Tall Sunflower

Hieracium cynoglossoides Arv.-Touv.

Ratibida columnifera (Nutt.) Wooton & Standl. Prairie Cone-flower

Solidago decumbens Greene var. oreophila (Rydb.) Fern.

Solidago gigantea Ait.

Solidago graminifolia (L.) Salisb.

Solidago missouriensis Nutt.

Taraxacum officinale Weber Common Dandelion

Tragopogon dubius Scop. Goat's-beard

CORNACEAE - DOGWOOD FAMILY

Cornus stolonifera Michx. Dogwood

CYPERACEAE - SEDGE FAMILY

Carex aquatilis Wahlenb.

ELAEAGNACEAE - OLEASTER FAMILY

Elaeagnus commutata Bernh. Silver-berry

EQUISETACEAE - HORSETAIL FAMILY

Equisetum hyemale L. var. robustum (A. Br.) A.A. Eat. Scouring Rush

ERICACEAE - HEATH FAMILY

Arctostaphylos uva-ursi (L.) Spreng. Kinnikinnik

GENTIANACEAE - GENTIAN FAMILY

Gentiana affinis Griseb. Prairie Gentian

GRAMINEAE - GRASS FAMILY

Agropyron repens (L.) Beauv. Quack Grass

Agropyron subsecundum (Link) Hitchc. Bearded Wheat Grass

Agropyron trachycaulum (Link) Malte Slender Wheat Grass

Agrostis exarata Trin. Spike Redtop

Elymus canadensis L. Canada Wild Rye

Glyceria grandis S. Wats.

Phalaris arundinacea L. Reed Canary Grass

Phleum pratense L. Timothy

Spartina gracilis Trin. Alkali Cord Grass

Stipa columbiana Macoun Columbia Needle Grass

JUNCAEAE - RUSH FAMILY

Juncus howellii Herm.

Juncus longistylis Torr.

LABIATAE - MINT FAMILY

Monarda fistulosa L. var. menthaefolia (Graham) Fern. Wild Bergamot

LEGUMINOSAE - PEA FAMILY

Astragalus aboriginum Richards.

Astragalus alpinus L.

Astragalus robinsii (Oakes) Gray

Astragalus striatus Nutt.

Astragalus tenellus Pursh

Glycyrrhiza lepidota (Nutt.) Pursh Wild Licorice

Hedysarum alpinum L.

Medicago lupulina L. Black Medick

Medicago sativa L. Alfalfa

Melilotus alba Desr. White Sweet Clover

Oxytropis viscida Nutt. Viscid Loco-weed

Thermopsis rhombifolia (Nutt.) Richards. Buffalo Bean

Vicia americana Muhl. Wild Vetch

LILIACEAE - LILY FAMILY

Allium cernuum Roth — Nodding Onion

Lilium philadelphicum L. var. andinum (Nutt). Ker — Tiger Lily

Smilacina stellata (L.) Desf. — Star-flowered Solomon's-seal

LINACEAE - FLAX FAMILY

Linum rigidum Pursh — Yellow Flax

ONAGRACEAE - EVENING PRIMROSE FAMILY

Oenothera biennis L. — Yellow Evening Primrose

ORCHIDACEAE - ORCHID FAMILY

Habenaria hyperborea (L.) R. Br. — Northern Green Orchid

PINACEAE - PINE FAMILY

Juniperus horizontalis Moench — Creeping Juniper

POLYGONACEAE - BUCHWHEAT FAMILY

Rumex crispus L. — Curled Dock

PRIMULACEAE - PRIMROSE FAMILY

Lysimachia ciliata L. — Fringed Loosestrife

PYROLACEAE - WINTERGREEN FAMILY

Pyrola asarifolia Michx. var. purpurea (Bunge) Fern. — Common Pink Wintergreen

RANUNCULACEAE - CROWFOOT FAMILY

Actaea rubra (Ait.) Willd. — Red Baneberry

Anemone cylindrica A. Gray — Long-fruited Anemone

Thalictrum venulosum Trel. — Veiny Meadow Rue

ROSACEAE - ROSE FAMILY

Amelanchier alnifolia Nutt. — Service-berry

Crataegus chrysocarpa Ashe	Hawthorn
Fragaria virginiana Duchesne var. platypetala (Rydb.) Hall	Strawberry
Potentilla anserina L.	Silverweed
Potentilla fruticosa L.	Shrubby Cinquefoil
Prunus virginiana L. var. melanocarpa (A. Nels.) Sarg.	Choke Cherry
Rosa woodsii Lindl.	Common Wild Rose

RUBIACEAE - MADDER FAMILY

Galium boreale L.	Northern Bedstraw

SALICACEAE - WILLOW FAMILY

Populus angustifolia James	Narrowleaf Cottonwood
Populus balsamifera L.	Balsam Poplar
Populus balsamifera L. subsp. trichocarpa (T. & G.) Brayshaw	Black Cottonwood
Populus X balsamifera	
Populus tremuloides Michx.	Quaking Aspen
Salix interior Rowlee	Sandbar Willow
Salix lasiandra Benth. var. caudata (Nutt.) Sudw.	
Salix bebbiana Sarg.	Beaked Willow

SCROPHULARIACEAE - FIGWORT FAMILY

Castilleja miniata Dougl.	Common Red Paint-brush
Castilleja septentrionalis Lindl.	Common Yellow Paint-brush
Penstemon nitidus Dougl.	Smooth Blue Beard-tongue
Verbascum thapsus L.	Common Mullein

TYPHACEAE - CATTAIL FAMILY

Typha latifolia L.	Common Cattail

UMBELLIFERAE - CARROT FAMILY

Cicuta douglasii (DC.) Coult. & Rose

Zizia aptera (A. Gray) Fern. Meadow Parsnip

VIOLACEAE - VIOLET FAMILY

Viola adunca J.E. Smith Early Blue Violet

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THE POSTGLACIAL INVASION OF FISHES INTO ALBERTA

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Although fishes, both marine and freshwater, are known from Alberta in the fossil record from many millions of years ago (e.g., Ebel, 1976; Gardiner, 1966) our present fauna is, to many people, surprisingly recent in its origins.

Up until about 15,000 years ago most of Alberta had been covered by ice during various ice ages occurring over the last million

or so years. The areas that escaped the thick ice mass, the Cypress and Porcupine hills, nunataks of the Rocky Mountains, and a long discontinuous area along the eastern flanks of the Rockies, probably did not support fish. The latter area, which was free of glacial advance between about 1500 and 2400 m elevation (per. comm. L.A. Bayrock; Reeves, 1973, reviews the evidence for an "ice-free" corridor with the last coalescence of the Laurentide and Cordilleran (in the west) ice sheets occurring in the Athabasca Valley in early Wisconsin or Illinoian times) may have been a refugium for some invertebrates (Clifford and Bergstrom, 1976). Fish and other animals could invade previously glaciated areas once the ice front retreated. The glaciers started to leave southern Alberta about 15,000 years ago. The ice margin was in the Edmonton vicinity about 12,000 years ago and retreated across the northeastern portion of the province about 10,000 years ago.

One interesting question in biogeography (the study of plant and animal distribution) is: "Where were our plants and animals during the ice age, and what dispersal routes did they use to attain their present distribution?" The known Quaternary fossil evidence is too meagre to be of much help in answering this question. However, various lines of evidence from glacial geology and studies of geographical variation of the fish in question suggest that the species of our present Alberta fish fauna lived in three major ice-free areas called refugia and entered Alberta as follows: i) across the northern border from Yukon drainage of Alaska and Yukon Territory (and perhaps in parts of the Arctic); ii) across the western border from Columbia drainage of Oregon and Washington; iii) across the southern and eastern borders from Missouri and Mississippi drainages. Detailed studies by such ichthyologists as Drs. Cas Lindsey and Don McPhail (e.g., McPhail and Lindsey, 1970) have contributed much to our understanding of fish dispersal following glaciation, and Mr. Alan Wells is currently doing his Ph.D. thesis at the University of Alberta on this topic. Many exciting problems remain unanswered.

Fish are limited in their distribution by several factors such as competitive interactions and temperature regimes. Geographic barriers in the form of different drainage patterns are, of course, important limiting factors in the modern ichthyofauna. Fortunately, these present day barriers did not always exist in their present form.

The Laurentide of Keewatin ice sheet in retreating in the general direction of decreasing elevation (i.e., to the northeast) acted as a dam with melting waters impounded behind the ice front in proglacial lakes. These lakes had various outlets, sometimes discharging to the north or west and at other times to the south or east. This enabled our fish to cross existing drainage boundaries. Probably only a few species (such as Arctic grayling and lake Whitefish) if any, arrived in northwesternmost Alberta from a Yukon refugium. These fish also had refugia elsewhere which probably populated most of Alberta. Four of our 48 native fish species, mountain whitefish, largescale sucker, redside shiner, and squawfish (our only normally fish-eating minnow) arrived from the Columbia River refugium. From a knowledge of their present distribution and evidence from glacial geology, it can be postulated that these species moved up the Okanagan system and passed into Fraser drainage near Sicamous. About 9,500 years ago this was an area subject to glacial lakes caused by ice dams, isostatic rebound (which raised the Shuswap Basin relative to the Okanagan Valley), and headwater capture. We think this route was utilized because part of the present drainage flowed into the Okanagan system when glacial Lake Shuswap and glacial Lake Penticton were continuous (and much higher than the present lakes) (Fulton, 1969). Once in the Fraser the fish could move into the Peace system, north of Prince George through a similar drainage connection, and downstream into Alberta. Other routes may also have been utilized. Dolly Varden and cutthroat trout may have passed directly from Columbia drainage to Bow drainage via the Kicking Horse Pass near Wapta Lake and Bath Creek or, alternately, moved up the Bow River from Missouri drainage via a Milk River-South Saskatchewan interconnection.

Most of Alberta's fish originally came from the complex Missouri-Missippian refugium. Various glacial lakes (e.g., various phases of Glacial Lake Agassiz) aided this movement. Of local interest, movement from Saskatchewan drainage into Athabasca drainage was possible because of the existence of "Glacial Lake Edmonton." This "lake" consisted of a series of overlapping lakes existing at differing times about 13,500-11,800 years ago with the ice front to the northeast (St. Onge, 1972). The various stages connected North Saskatchewan drainage with Athabasca and Smoky drainages and was undoubtedly an important transfer route. Had it not existed, the Athabasca and Peace rivers would have fewer fishes than they do.

Even today the North Saskatchewan and Athabasca drainages are closely connected in some low lying areas, and fishes such as brook stickleback may still be subject to drainage transfer during exceptionally high run-off.

Perhaps the farthest dispersal of any of Alberta's fish was made by the white sucker. This fish, usually reaching a length of 40 cm or so, probably moved from Missouri-Mississippi drainage into Saskatchewan drainage, across into Athabasca and Peace drainages, and from the headwaters of the latter into Fraser and Skeena drainages (Nelson, 1968: 114, in a study of hybridization between white and largescale suckers in Peace and Fraser drainages, alludes to the possibility of white suckers being in the Peace area up to about 25,000 years ago, but this is still speculation and perhaps less probable than the above postulated movement direct from the southeast during the last 15,000 years). Such a remarkable movement was undoubtedly only possible because of the white sucker's remarkable adaptability. For example, it can spawn in inlets, outlets, and in lakes. Unfortunately, the white sucker, like many of our other natives, is a much maligned fish. It is considered to be a "trash", "coarse", or "rough" fish by many fishermen but, of course, it is no more deserving of this title than is the waxwing or bluejay deserving to be called a "trash" bird just because they are not hunted and eaten like grouse or ducks.

In all, then, at least 48 species of fish have dispersed into Alberta (three more native fish than the number known in 1970 (Paetz and Nelson, 1970)). Several additional species (e.g., Arctic lamprey, inconnu, round whitefish, chum salmon, and peamouth chub) have been recorded close to the border and perhaps, occasionally at least, make it across. Most localities that would potentially attract a fisherman have between two and ten native species, but a total of 29 native species have been collected from the North Saskatchewan River in the vicinity of Edmonton (most, however, are relatively rare and only about five might be expected to be caught by an average fisherman).

Alberta's number of 48 native species (excluding such introductions as brook trout, kokanee, brown trout, and golden trout), out of almost 20,000 recognized species in the world, is indeed a small number, and is a less favourable ratio by about 13 times than

that for birds and mammals combined (about 400 species compared to 12,300 species in all). Of course, some birds migrate out of the province during unfavourable seasons, whereas there is no evidence of any Alberta fish species undergoing a complete migration out of the province. Although most of the 6,900 freshwater species are tropical, the number is still small when we consider that many mid-western states, much smaller in area and with less water, have over 150 native species (we also have fewer species than adjacent British Columbia, Saskatchewan, or Montana). Possibly the reason why Alberta has relatively few fish is because of the headwater position and distance from the refugia. Of the several hundred species that probably lived in the Missouri-Mississippian refugium, only the ones capable of dispersing through varied environments reached Alberta. Most species dispersed relatively short distances.

The fish fauna is relatively uniform in most areas of Alberta east of the Rockies. However, in the Karst topography area of Wood Buffalo National Park there are some interesting anomalies in fish distribution. This large area of sinkhole lakes and underground streams, dissolved out of the limestone and gypsum bedrock, is primarily in the northeastern part of the park. Salty rivers exist with some springs having nine times the salt (sodium chloride) concentration of sea water.

The eastern border of the park runs along the Slave River, which is the largest river in Alberta (discharging 87% of the water that flows out of the province) and about the lowest in elevation. The species composition in the Slave and in lakes and streams to the east, also in Precambrian Shield, is markedly different from that in the sinkholes. In fact, many species of fish occur in localities surrounding the sinkhole area but do not occur in the sinkholes themselves. Alternately, many of the species in the sinkholes are absent in adjacent areas. The park is at or near the northern limit for several tetrapods (garter snakes, whooping cranes, and pelicans) and several species of fish (Iowa darter, fathead minnow, and pearl dace). There was probably a continuous distribution of these fish species several thousand years ago. Climatic changes (such as a Hypsithermal with maximum warmth occurring about 6,000 years ago) may have caused the extirpation of northern populations except for those in the more thermally stable sinkholes (thereby creating these northern geographic relicts). Since the

reinvasion there have been many changes which have resulted in retreats (sometimes leaving disjunct populations) and range extensions.

Wood Buffalo National Park is also the only area in North America where both brook and ninespine sticklebacks occur together with a high proportion of individuals lacking all trace of the pelvic girdle (Nelson and Paetz, 1972, 1974). This interesting phenomenon is without explanation at present. However, it is probably not just a coincidence that these localities lack predaceous fish which are so common in surrounding areas where the sticklebacks possess pelvic spines.

We have been left with a rich legacy, the result of some remarkable dispersals covering hundreds to thousands of miles some several thousand years ago. Unfortunately, relatively few naturalists observe our fish. SCUBA and snorkel observations are the most rewarding, but watching from strategic points along streams and lake shores can also be interesting. Who has seen the brightly coloured male Iowa darter court in the spring, the reddish striped male longnose sucker ascend a creek in May, the male brook stickleback building its nest out of aquatic plants in June, the trout digging redds in the clean mountain stream, or the male fathead minnow with its black tuberculated snout? It's worth looking for.

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EDITOR'S NOTE: The above paper is based on the author's address to the May 1976 FAN meeting in Edmonton, and was specifically requested by the Editor. Dr. Nelson is currently Associate Chairman of the Dept. of Zoology, Univ. of Alberta. He is the author of many scientific papers and two books: "The fishes of Alberta", with M.J. Paetz, and "Fishes of the World" (see A.N. 6: 377, 1976) -M.K.M.

A KEY TO THE IDENTIFICATION OF ALBERTA NATURALISTS AND RELATED FAUNA

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In recent years there has developed a considerable interest in

the environment, especially in Alberta. Concomitant with this has been an outbreak of naturalists and related fauna. The same phenomenon has been observed in many parts of the world. This new and startling development has left government officials, politicians, engineers and park wardens in the unenviable position of dealing with these creatures without any formalized taxonomic literature. Recently scientists throughout the northern hemisphere have initiated research into the classification problems of this confusing and polymorphic group. Bright and Holly (1976?) have produced just such a key, to promote nature conservation in the British Isles, and while theirs is an admirable and monumentous thesis, it has limited applicability to the more diverse and rigorous habitats we find in Alberta.

I have, in this short paper, attempted to set forth a workable key for use in Alberta. As this is the first taxonomic treatment attempted for this part of the world, it is probably incomplete in some ways, but it does serve to 'push back the frontier' and draws together the scattered, known facts regarding this puzzling assemblage. It is hoped that it will also provide a basis for, and stimulate, future exhaustive studies which are so badly needed, not only in Alberta, but in the rest of North America.

A Key To The Identification Of Alberta Naturalists And Related Fauna In The Field

1. Sedentary; always in groups; casual in grassy places and on roadsides ..... COMMON PICKNICKER

   Active; generally distributed singly or in groups in any habitat ..... Family NATURALIST 2

2. With inorganic associations; encumbered with equipment; rather local 3

   With organic or no associations 8

3. Equipment simple, normally only hammer and chisel; on bare stony ground or along rock outcrops, throughout Alberta, common in mountains and old quarries; nesting in fossiliferous beds ..... GEOLOGIST

Equipment costly and elaborate 4

4. Only active in fine weather, often three legged; sometimes over exposed PHOTOGRAPHER

Not as above 5

5. With conspicuous pick and shovel at first, trowel and brush appearing later; naturalized on old farmsteads and waste places; usually in groups ARCHAEOLOGIST

Usually solitary 6

6. Widespread, especially on Indian reservations, usually seasonal in occurrence; noted for imitative behaviour; occasional in mixed group with above species ANTHROPOLOGIST

Not as above 7

7. Terrestrial, with metal detector and spade FIELD NUMISMATIST

Aquatic, with snorkel and grapnel; furtive habit TREASURE HUNTER

8. Heavily laden with paraphenalia; gregarious; often wandering aimlessly in summer; also active in winter and then found on bits of wood; common and spreading HIKER-SKIER

Unencumbered or sparsely equipped 9

9. Usually green; size variable; habits diverse Tribe BOTANIST 10

Not as above 17

10. With vasculum; form laterally compressed; garden escape, becoming rare; coat usually white; often sticky with glue; in Hortus siccus HERBARIUM KEEPER

Not as above 11

11. Woody climber; common and invasive; often introduced FORESTER

With hand lens and excursion flora; usually native
ALBERTA BOTANIST agg 12

12. Always above 6000' in Alberta; aestival; scattered but very local, occasionally escaping to high arctic habitats in northern Canada; often cultivated ALPINE BOTANIST

Occurring below 6000' 13

13. Found in open, dry places in summer and autumn; associated with native and domestic herbivores; often with shears; occasionally green; scattered but very local RANGE ECOLOGIST

Not as above 14

14. Conspicuous in autumn but never green; often short lived; local and decreasing MYCOLOGIST

Always green, occasionally black and blue as well 15

15. Cliff-hanging or gorgeous; often in umbrage; erect to semi-erect PTERIDOLOGIST

Lowly, procumbent; wet underfoot 16

16. Found in forests and wet places; terrestrial or arboreal; known to compete with caribou for reindeer lichen; rare in cities (see Bryologist below) LICHENOLOGIST

Rarely arboreal in Alberta; not known to compete with caribou. (This species is very difficult to separate from the one above, they often occur together and may in fact hybridize) BRYOLOGIST

17. In flight or hovering 18

Stationary or slow-moving; prostrate or crouching, rarely erect 19

18. Diurnal with net or, if nocturnal, with trap; often colonizing open places; rarely semi-aquatic with forceps
ENTOMOLOGIST

With binoculars or telescope, sometimes nets and rings; very common, locally dominant ORNITHOLOGIST

19. Associated with water; lower parts often submerged; little affected by weather 20

Not as above 21

20. Common amongst emergent vegetation around sloughs and lakes; with bag and gun in season; gregarious WILDFOWLER

Usually on lakes, or near running water; voice deceptive; often associated with flies ANGLER

21. Thermophilous, rarely seen during nasty weather; occasionally nocturnal; amphibious, often found near water HERPETOLOGIST

Not as above 22

22. Hardy annual; with conspicuous coat and hat varying in colour from bright orange to red; usually setose; seasonally abundant in forest reserves BIG GAME STALKER

Inconspicuous, nocturnal; woodlands, meadows, etc. throughout the province 13

23. Usually single; hirsute; with traps and tags; associated with disturbed ground and forests MAMMOLOGIST

Widespread but local; associated with undisturbed areas; always in pairs COURTING COUPLE

Literature Cited

Holly, C., and I. Bright. 1976? Key to the identification of naturalists in the field. United Kingdom Pamphlet.

OVERHEARD (60)

Those appropriate bird names

"Blue Petrel ... The general color of the upperparts is gray, not blue as it is in the prions ...."

George E. Watson, 1975
"Birds of the Antarctic and subantarctic", p. 125.

MONOFILAMENT FISHING LINE CAUSES THE DEATH OF A CLIFF SWALLOW NESTLING

by Geoffrey L. Holroyd
Box 1343, Banff, Alberta TOL OCO

On 4 May 1976, Don Karasiuk and I found a dead nestling Cliff Swallow (Petrochelidon pyrrhonota) hanging from a Cliff Swallow nest. The nestling's right wing was tangled in monofilament fishing line. When the nest was constructed the adult swallows incorporated a discarded ball of fishing line into the nest. Apparently as the fledgling left the nest its wing was caught by the line and the bird hung there until its death.

The nest was located under the bridge at the outflow of Maligne Lake in Jasper National Park, Alberta. A large colony of Cliff Swallows nest under this bridge. On 9 June 1976 I estimated 120 adult Cliff Swallows, a potential 60 breeding pairs.

The outflow of Maligne Lake and the bridge are a popular haunt for fishermen. Several other balls of fishing line were found along the immediate shore and a second nest contained some fishing line. Both nests were destroyed by us and all the line picked up.

On the Great Lakes, I have encountered many ducks and gulls that have been entangled by line and hooks. The inevitable death is an unnecessary waste.

This note is a plea to fishermen and to naturalists to pick up all monofilament fishing line and hooks that they find.

OVERHEARD (61)

Hardy Bees

"By the first of June willows are flowering and large active bumblebees cover themselves with reddish pollen, often working in freezing temperatures when the sun is obscured."

Laurence Irving
1960, "Birds of Anaktuvuk Pass,

THE BLUE CAMAS - AN HISTORICAL V.I.P.

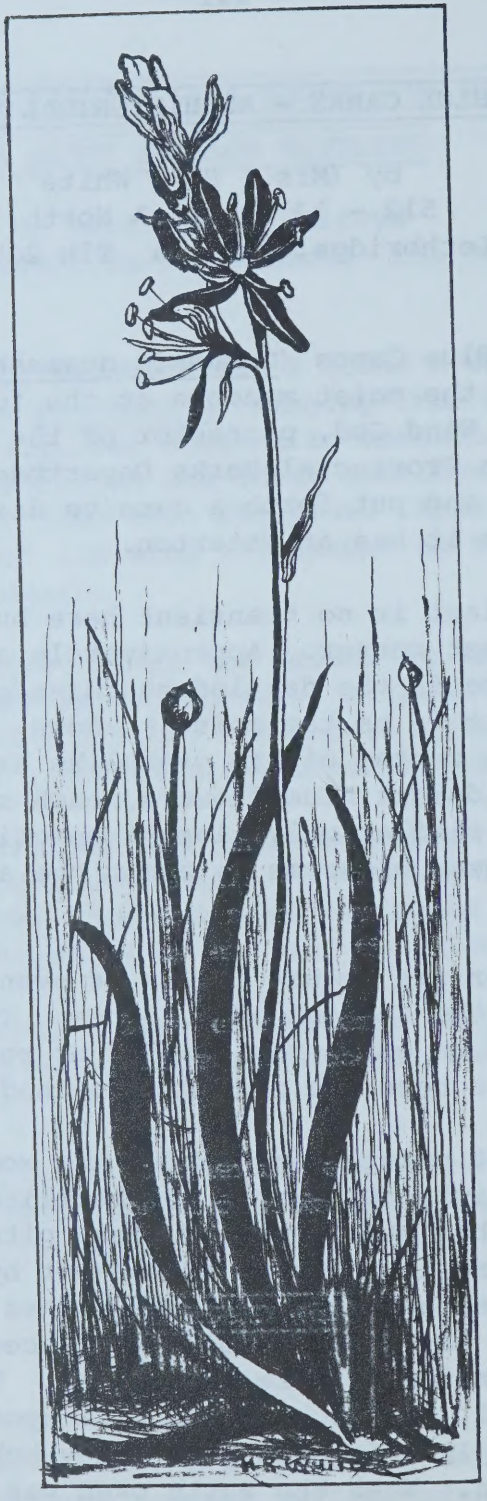
by (Mrs.) H.R. White
512 - 12 Street A North
Lethbridge, Alberta T1H 2J7

Each June the Blue Camas (Camassia quamash) spread a beautiful blue blanket across the moist meadows at the foot of Chief Mountain within sight of the Wind God, protector of the region. With his help and that of the Provincial Parks Department this small area has continued to thrive and put forth a massive display instead of diminishing in numbers as it has at Waterton.

This stately plant is no transient here but prefers to reside in Alberta's southwest corner. Approximately a foot and a half tall it is equally at home in the dappled sunshine of damp poplar and willow thickets as it is on the moist meadows. Happily ensconced it sends forth from the center of its grasslike basal leaves, an unbranched spike of midnight blue flowers, each sporting three petals and three sepals so similar only close inspection reveals the difference. Each of these blossoms is about one and a half inches across.

Valued by us for its beauty it was of even greater importance as a staple food to the Indians of the area. This starchy bulb was nutritious and could be eaten raw, boiled or roasted. The latter process seems to have been the preferred method of preparation.

Just as the last petals were fading the women moved, enarmed with long pointed sticks to harvest the bulblike roots. When piles of the white tubers had been gathered, deep pits were dug, lined with stones which were then heated to red-hot by fire. All coals were carefully removed and the super hot stones covered with a layer of wet grass or wild hay. The bulbs were placed in these steaming holes in layers separated by more damp grass. The final cover, once the pit was full, was of bark and soil upon which was built still another fire. In this moist heat they baked for up to three days and three nights. When the earth oven was opened, the cooked bulbs, now brown and sugary sweet, were removed and spread on the dry prairie in the sun to dehydrate so that they could be stored



for future use. Not only would this rich harvest feed those who gathered it during the cold winter but would be used as a very valuable trade item for goods offered by other tribes and eventually the white settlers and explorers. The latter including the Lewis and Clarke expedition which relied heavily upon this food.

So singularly vital was this plant to the Indians, the right to gather the roots sparked many an intertribal war including the last important Indian War in the Pacific Northwest. When the Nez Perces, lead by Chief Joseph, moved from their reservation to gather the harvest, the infraction caused the federal forces to march against them. Opposed to war, Chief Joseph nevertheless fought with brilliance and honour for this valuable piece of homeland. Eventually wearied by it all he and his remaining people headed toward the Canadian border and freedom. Unfortunately they were cut off only 30 miles from their destination.

Had they arrived here they would have found the plant as highly prized this side of the border. It was so honoured by the Indians here, it was prepared with the large leaves of the Balsam Root and used on the sacred alter during the Sun Dance ceremony.

Long may the Wind God protect it.

Height of blooming period: June 19 - 26, 1975
June 12 - 17, 1976

Police Outpost Provincial Park

H.A. MacGREGOR, A TRIBUTE

by William T. Carlyle
5503 - 111 Avenue, Edmonton, Alberta

Dr. Hugh Alton MacGregor, a long time member of the Edmonton Natural History Club, lost his life in a tragic accident on a city street February 2, 1977.

He is survived by his wife, Anna, two sons, Rev. Allan

MacGregor, Moose Jaw, Saskatchewan and Ronald, a teacher; a daughter, Dr. Marguerite MacGregor Ragan; a sister, Mrs. W.L. Lucas, Edmonton and three brothers, Ronald of Holden, Kenneth of Edmonton and Dr. Malcolm MacGregor of the University of Minnesota and eight grandchildren.

Dr. MacGregor was a man of many and varied interests as evidenced by the several clubs and societies to which he had belonged. These included the Edmonton Bird Club, of which he was a founding member, the Edmonton Natural History Club, the Historical Society of Alberta, the Agricultural Institute of Canada, the Edmonton Camera Club, the Gateway Camera Club, the Archaeological Society of Alberta and the Edmonton Archives Auxiliary. He was for many years a member of the Edmonton Figure Skating Club and served as a Judge evaluating candidates for proficiency awards. These duties took him all over Alberta and also to Yellowknife, N.W.T. and Dawson Creek, B.C.

Dr. MacGregor was born in 1894 in Detroit, Michigan. He received his High School education there and then worked on freighters on the Great Lakes. In 1913 he came with his family to Alberta. He took up a homestead at Thorhild and then attended Normal School. Until 1924 he farmed and taught in rural schools north of Edmonton. He served his country in 1917 and 1918 in the Canadian Navy. From 1924 to 1928 he attended the University of Alberta, graduating with a Bachelor of Science degree in Agriculture. Summers were spent in teaching and also working on Field Crop experiments and for the Entomology Department at the University of Alberta. In 1928 he went to Camrose Normal School as Science Instructor. He had already acquired a general knowledge of the insect life and wild flowers of the Parkland region of Alberta. At Camrose he met and became a close friend and travelling companion of the well-known Ornithologist, the late Frank L. Farley. As a result of this, birds were added to his interests. Mr. Farley inspired a love of birds and their study in many young people in the Camrose area. Perhaps his most noteable protege was Arthur Twomey who went on to become a well-known Ornithologist and Museum Director. Mr. Farley often prepared articles on birds for the press. Some of these were incorporated in a booklet, "BIRDS OF THE BATTLE RIVER REGION OF ALBERTA". In this he acknowledged the help and advice given him by Dr. MacGregor.

In June, 1931, a party of four from Camrose, Frank Farley, Arthur Twomey with his father Dennis Twomey, who was Bailiff of Camrose, and Alton MacGregor journeyed over the newly constructed Hudson Bay Railway to Churchill, Manitoba. That year Churchill was a mecca for Ornithologists for it was the first time in those days of limited travel that one could hope to observe the birds which nested in the Arctic regions without going into the area the fall before. Accommodation at Churchill did not exist. Visitors might be able to obtain meals at a construction company mess hall, camp in tents, or, as the group from Camrose did, live in an empty box car. Dr. MacGregor remembered that a steamer trunk of his which they took with them full of food came back filled with bird skins. Their days were spent mostly in the stunted spruce woods some miles from camp, observing, making notes and collecting specimens for skins. The diary of Dr. MacGregor kept of his Churchill trip in 1931 makes very interesting reading today, as do his lists of bird sightings and observations and notes on flora and insects.

Dr. MacGregor spent a College year at Cornell University in Ithaca, N.W., obtaining his Master's Degree. While there he sat in on an Ornithology Course given by Arthur A. Allan. By 1937 he had also obtained a Doctor of Education degree from Oregon State College. That same year he organized and became the first Superintendent of the Foremost School Division. In 1942 he returned to teach at the Edmonton Normal School. In 1945 he was appointed Associate Professor of Education at the University of Alberta. He retired on pension in 1959 with the rank of Full Professor.

Dr. MacGregor possessed the happy gift for friendship with persons of all ages and from all walks of life. His knowledge and experiences he freely shared with all. He will be greatly missed.

Farewell, good companion of many trails.

EDITOR'S NOTE: The foregoing article by Dr. Carlyle is essentially reprinted from Edmonton Naturalist 5: 59-61, 1977. On p. 77, of the same issue an announcement is made that the City of Edmonton has established a trust fund, "the Nature Centre Trust Fund" in memory of Dr. MacGregor. Donations are tax deductible, and are to be used towards purchase of books, materials or items specified

by the donor for the John Jansen Nature Centre in Edmonton. The March 1977 newsletter of the Edmonton Bird Club announces that club's donation to the Loran L. Goulden Memorial Fund in memory of Dr. MacGregor. -M.K.M.

THE WHITE-FACED IBIS IN SOUTHERN ALBERTA

by Helen C.E. Schuler
2630 - 22 Avenue, S., Lethbridge, Alberta

On 28 May 1975 great excitement reigned in our household. Harvey Johnson, an instructor at the Lethbridge Community College, phoned to say there were six White-faced Ibis (Plegadis chihi) on Crow Indian Lake, a large marshy lake straight south of Skiff and about 75 miles southeast of Lethbridge. Of course, he received the usual reaction, "What did you have in your thermos besides coffee?", but he is a knowledgeable birdwatcher, so we accepted his word. A trip there on my own about two weeks later revealed no ibises, but David Eisenhauer, another instructor at the college, and also an experienced birdwatcher, reported seeing five of what he thought were Glossy Ibis (P. falcinellus) on Stirling Lake, a marshy area about 20 miles southeast of Lethbridge. Three were seen there by Harvey Johnson on 21 June, but not identified to species. On 4 July, George Freeman of Ducks Unlimited phoned to say he had seen two "glossy" ibis on Stirling Lake. This time when I went, I was lucky to see three, one of which at least had a clearly defined border of white around the base of the bill.

John Eisenhauer, another experienced birdwatcher, notes, "On 10 July 1975 4 ibis, one bird with typical plumage characteristics including white head plumage, one bird with partial white head plumage, two birds without white head markings. Sightings within 60 m and several photos taken by T. Tormin." Besides Terry Tormin, the party included Al Wisely and Eric Tull, all of Edmonton.

On 19 July we saw one ibis - no visible white on face. On 12 August we saw several flying, one group of 5 and two flying singly. We wondered if this was a family group. The last sighting of that

year, 1975, was on 13 September when two were seen at Stirling Lake, where the July and August sightings also took place.

We have had only one further report of the ibises, one at Stirling Lake on 11 May 1976 by Darryl Frohlick.

There appears to be little record of the White-faced Ibis in southern Alberta. Godfrey (1966) did not mention Alberta records, although there were a few unsubstantiated sightings in British Columbia. He defines the normal range as extending from central California, eastern Oregon, Colorado, Nebrasksa, southwestern Louisiana and Florida (locally) south the Argentina. Salt and Wilk (1966) listed the bird as hypothetical in southern Alberta. However, in personal communication with Smith and Wallis (1976), W.R. Salt states that the first authentic record was of a single bird in the Pakowki Lake area on 11 June 1974 by D. Stirling. Smith and Wallis (1976) saw 7 adult White-faced Ibis in the bulrush marshes at Pawkowki Lake on 1 July 1975, of which 5 appeared to be nesting. On 24 July they observed a total of 11 adults there. Pakowki Lake is a large shallow salty lake about 45 miles southwest of Medicine Hat.

George Freeman of Ducks Unlimited (pers. comm.) states he had a sighting near Irricana in 1964 but cannot remember the actual date. Harvey Johnson informs us that his ornithology professor at Univ. Montana at Missoula told him that White-faced Ibis now breed south of the Alberta-Montana border, so a range extension into Alberta may not be surprising, especially since irrigation practices tend to create shallow, salty drainage areas which provide suitable habitat.

(EDITOR'S NOTE: Both White-faced and Glossy Ibis have undergone considerable range expansions in recent years, and extralimital records are widespread. The White-faced has been documented in Saskatchewan and Glossy Ibis records are becoming frequent in the Maritimes. -M.K.M.)

Whatever the reason, it would be nice to have this bird added to our permanent resident avifauna. This is a beautiful creature, looking in flight like a curlew with a heavier beak, but up close a gorgeous, rich glossy chestnut, with an iridescent sheen of green and purple on wings, crown and back. The mature birds have a clear delineation of white around the base of the bill. So, he would,

indeed be an attractive addition to our bird checklist.

Literature Cited

Godfrey, W.E. 1966. The birds of Canada. Nat. Mus. Canada Bull.

Salt, W.R., and A.L. Wilk. 1966. The birds of Alberta (Second, revised edition), Edmonton, Queen's Printer.

Smith, W.W., and C.A. Wallis. 1976. Preliminary investigation of the birds of Pakowki Lake, Alberta. Blue Jay.

THE PRAIRIE NEST RECORD SCHEME

by H.W.R. Copland, Co-ordinator
Prairie Nest Record Scheme, Manitoba Museum of Man & Nature
190 Rupert Avenue, Winnipeg, Manitoba R3B ON2

The idea of recording on cards detailed information about nesting birds started in England. In 1955 Dr. M.T. Myres introduced the program to British Columbia. The Prairie Nest Records Scheme was begun by the Saskatchewan Natural History Society in 1958. This scheme included Alberta, Manitoba, Saskatchewan, and the Northwest Territories. In 1966, operation of the Prairie Nest Records Scheme was transferred to the Manitoba Museum of Man and Nature.

What are the objectives of the Prairie Nest Record Scheme? The initial objective is to encourage naturalists and biologists interested in birds to record on specially designed cards, observations of bird nests from the time construction is first noted or an active nest first observed until young have fledged or the nesting terminated by accident or failure.

Although ideally it would be advantageous to have the complete nesting history it is not absolutely necessary. Six appropriately timed visits can provide almost all the necessary data which includes determining start of egg laying, length of incubation, hatching and time of fledging. Extra visits may do unnecessary harm or cause de-

sertion by adults. Many participants are unable to visit nest sites frequently. Sometimes nests are discovered on a one day trip or at stops when passing through an area with no opportunity to return. However, even if visited once, a nest record has greater value if contents and description have been accurately noted than no details recorded.

The secondary purpose is to make available the recorded data to biologists or researchers studying nesting biology, breeding success, breeding distribution, parasitism or some other aspect. Nest record schemes are not a substitute for detailed research. A series of cards on a particular species can be helpful by indicating whether nests are difficult or easy to locate, where studies can be undertaken and also can furnish names of persons able to assist the researcher.

Copies of cards on rare and endangered species are not released without special consideration as there is a danger the locations of nest sites becoming known to collectors of eggs or young birds.

What use is made of nest record cards? Cards from the Prairie Nest Records Scheme have been used by Canadian Wildlife Service biologists concerned with the distribution of falcons, and toxic chemical investigation. Currently one branch of this organization is compiling information on egg dates and young for all species from the cards on file. Data on American Robin, Barn Swallow, and Red-winged Blackbird had been programmed for a computer system by Dr. A.J. Erskine, Canadian Wildlife Service, Ottawa. Researchers from California working on Brown-headed Cowbird parasitism requested copies of cards. Researchers and graduate students at institutions such as the Universities of Saskatchewan, Manitoba, Alberta, and Michigan have also used the cards. Information concerning colonial nesting species was requested by the Saskatchewan Natural History Museum. Other species for which cards have been used include Horned Lark, Burrowing Owl, Horned Grebe, Common Loon, Tree Swallow, Yellow Warbler, Upland Sandpiper, Starling, Black-billed Cuckoo, to name a few. The data from nest record cards has aided studies concerned with breeding distribution, nesting biology, and breeding success as well as the projects mentioned above.

Who are the participants discovering nests and recording data?

They are members of naturalist societies, park naturalists, biologists, graduate students, teachers, doctors, farmers, school students, business people, environmental study agencies, and other keenly interested contributors.

Of prime importance should be the welfare of the nesting birds and their young. Participants should be concerned with the following:

(a) Avoid attracting attention to nests by leaving well defined trails which can aid predators.

(b) Damaging or exposing concealed nests.

(c) Distressing adults unduly causing them to desert.

(d) Causing young to leave the nest prematurely.

Colonial nesting species are especially vulnerable to predation or exposure resulting from visits by humans. For example, chicks of gulls and terns can be not only subjected to being victims of avian predators but also because many non-flying chicks leave the island nests they are swallowed by large fish. Therefore investigation of large colonies should be left to knowledgeable specialists equipped to obtain the necessary information in the least amount of time by ground or aerial survey.

Since the inception of the Prairie Nest Record Scheme in 1958, Alberta participants have contributed 5,264 cards on 192 species. Many thanks are due to these people for the time and effort spent in collecting and recording this information. A summary listing cards on species from Alberta currently in the files follows.

From the summary it can be seen that there are few cards or no cards on some Alberta species. This is understandable as nests of some species are difficult to find, are in remote areas or there is only a minimal population.

New participants from Alberta are invited to become contributors. Alberta researchers, biologists and students and government agencies working or concerned with birdlife will benefit from more

data being accumulated and made available. Blank nest record cards which are supplied to the Prairie Nest Records Scheme by the Canadian Wildlife Service, and a copy of the 1976 report can be obtained by writing to me at the address listed at the beginning of the article.

NOTE: In the 1976 report of the Prairie Nest Records Scheme, inadvertently the name of Ken Trann was left off the list of Alberta contributors. Since 1969 Ken has consistently contributed many cards and I sincerely regret this omission having occurred.

Prairie Nest Record Cards on File for Alberta to End of 1976

Common Loon	17	Common Merganser	10
Red-necked Grebe	74	Goshawk	4
Horned Grebe	35	Sharp-shinned Hawk	3
Eared Grebe	64	Cooper's Hawk	25
Western Grebe	9	Red-tailed Hawk	192
White Pelican	1	Broad-winged Hawk	4
Double-crested Cormorant	8	Swainson's Hawk	65
Great Blue Heron	34	Ferruginous Hawk	47
Black-crowned Night Heron	6	Golden Eagle	9
American Bittern	5	Bald Eagle	4
Trumpeter Swan	2	Marsh Hawk	56
Canada Goose	74	Osprey	12
Mallard	211	Prairie Falcon	35
Gadwall	14	Peregrine Falcon	1
Pintail	101	Merlin (Pigeon Hawk)	19
Green-winged Teal	10	American Kestrel (Sparrow Hawk)	38
Blue-winged Teal	42	Blue Grouse	1
American Wigeon	16	Spruce Grouse	5

Shoveler	25	Ruffed Grouse	23
Redhead	19	White-tailed Ptarmigan	3
Ring-necked Duck	8	Sharp-tailed Grouse	6
Canvasback	18	Sage Grouse	1
Lesser Scaup	34	Ring-necked Pheasant	7
Common Goldeneye	21	Gray Partridge	7
Barrow's Goldeneye	5	Sandhill Crane	1
Bufflehead	14	Sora	21
White-winged Scoter	7	American Coot	113
Ruddy Duck	15	Franklin's Gull	14
Piping Plover	3	Bonaparte's Gull	5
Killdeer	45	Forster's Tern	5
Common Snipe	20	Common Tern	21
Long-billed Curlew	8	Black Tern	46
Upland (Plover) Sandpiper	5	Rock Dove	24
Spotted Sandpiper	47	Mourning Dove	21
Solitary Sandpiper	5	Black-billed Cuckoo	1
Willet	11	Great Horned Owl	167
Greater Yellowlegs	4	Hawk Owl	2
Lesser Yellowlegs	6	Burrowing Owl	7
Short-billed Dowitcher	2	Great Gray Owl	3
Marbled Godwit	10	Long-eared Owl	50
American Avocet	50	Short-eared Owl	82
Wilson's Phalarope	25	Boreal Owl	3
California Gull	15	Saw-whet Owl	4
Ring-billed Gull	14	Common Nighthawk	6

Ruby-throated Hummingbird	1
Rufous Hummingbird	5
Calliope Hummingbird	1
Belted Kingfisher	3
Common (Yel-shftd.) Flicker	41
Common (Red-shftd.) Flicker	7
Pileated Woodpecker	7
Yellow-bellied Sapsucker	44
Hairy Woodpecker	5
Downy Woodpecker	9
Eastern Kingbird	27
Western Kingbird	7
Eastern Phoebe	42
Say's Phoebe	11
Alder (Traill's) Flycatcher	3
Least Flycatcher	34
Dusky Flycatcher	7
Western Flycatcher	3
Western Wood Pewee	14
Horned Lark	32
Violet-green Swallow	1
Tree Swallow	255
Bank Swallow	17
Rough-winged Swallow	12
Barn Swallow	89
Cliff Swallow	32
Purple Martin	15
Gray Jay	3
Blue Jay	10
Black-billed Magpie	264
Common Raven	2
Common Crow	121
Black-capped Chickadee	13
Mountain Chickadee	2
Boreal Chickadee	4
Red-breasted Nuthatch	2
Dipper	9
House Wren	102
Long-billed Marsh Wren	11
Northern Mockingbird	1
Gray Catbird	23
Brown Thrasher	9
American Robin	214
Hermit Thrush	7
Swainson's Thrush	8
Veery	2
Mountain Bluebird	138
Townsend's Solitaire	9
Golden-crowned Kinglet	1
Ruby-crowned Kinglet	2
Water Pipit	12
Sprague's Pipit	4

Bohemian Waxwing	9
Cedar Waxwing	38
Loggerhead Shrike	8
Starling	91
Solitary Vireo	1
Rey-eyed Vireo	3
Warbling Vireo	7
Black and White Warbler	1
Tennessee Warbler	2
Orange-crowned Warbler	1
Yellow Warbler	51
Magnolia Warbler	1
Yellow-rumped (Myrtle) Warbler	11
Yellow-rumped (Audubon) Warbler	4
Black-throated Green Warbler	1
Bay-breasted Warbler	1
Ovenbird	5
Mourning Warbler	2
MacGillvary's Warbler	1
Common Yellowthroat	4
Yellow-breasted Chat	2
Wilson's Warbler	1
American Redstart	2
House Wren	52
Western Meadowlark	14
Yellow-headed Blackbird	62
Red-winged Blackbird	265
Northern (Baltimore) Oriole	18
Northern (Bullock's) Oriole	1
Rusty Blackbird	6
Brewer's Blackbird	123
Common Grackle	1
Brown-headed Cowbird	130
Rose-breasted Grosbeak	3
Purple Finch	1
Common Redpoll	2
American Goldfinch	11
Rufous-sided Towhee	1
Savannah Sparrow	28
Baird's Sparrow	3
LeConte's Sparrow	2
Vesper Sparrow	19
Lark Sparrow	1
Dark-eyed (Slate-colored) Junco	15
Dark-eyed (Oregon) Junco	4
Tree Sparrow	2
Chipping Sparrow	23
Clay-colored Sparrow	68
White-crowned Sparrow	9
White-throated Sparrow	5

Lincoln's Sparrow	7	McCown's Longspur	2
Song Sparrow	33	Chestnut-collared Longspur	77

HIGHLIGHTS OF WINTER 1976 - 1977 BIRDS OF SOUTHERN ALBERTA

by Rudi Butot
81 Capri Avenue, N.W., Calgary, Alberta T2L OG9

The past winter, like the previous one, was one of mild temperatures with little or no snow cover. The snow that fell had come in two heavy snowfalls in December and January. February was the warmest on record with average temperatures almost 10 degrees C above the normal, and precipitation was the lowest since 1894. The rivers remained open all winter.

The Yellow-billed Loon, which had been found near Springbank and released in Calgary on the Inglewood Bird Sanctuary, was last seen on January 12th, and hopefully continued its southward migration. A flock of thirty-seven Canada Geese spent the winter in Calgary on the Bow River in company with some two thousand Mallards, several hundred Common Goldeneyes, three Barrow's Goldeneyes, two Green-winged Teal and five Common Merganers.

With the rivers wide open, there was no need for the birds of prey to gather at the few open stretches within Calgary as is usually the case, and only the odd Bald Eagle was reported during the winter season. Two Prairie Falcons were seen on the Calgary Xmas Bird Count on December 19, one was seen near Kathyrn on December 24, one near Shepard on January 6, one near Delacour on February 6, and one near Patricia on February 25. Twelve Merlins were counted on the Xmas Bird Count in Calgary, while one was seen near Cochrane on January 23.

One Ring-billed Gull lingered in Calgary until its last sighting on December 17. Single Great Horned Owls were reported as follows: Calgary - December 19 and January 30, Bottrel - December 5,

Patricia - February 26, Innisfail - February 25. On the stretch from Strathmore - Calgary four were sighted, with one pair nesting. Two were seen near Blackie on February 1. Snowy Owl numbers were low this winter. A Pygmy Owl was seen in Calgary on January 26, while one had also been reported from near Water Valley on January 2. One Great Grey Owl was also reported from the latter place that very same day. Short-eared Owls were reported as singles from High River, Aldersyde, Mazeppa, and Pekisko this winter, while six were reported from near Aldersyde on January 30, and four on February 1. One Saw-whet Owl was seen in Calgary on January 11.

Only a single Belted Kingfisher was reported this winter in Calgary. Common Flickers in ones and twos were reported from Calgary throughout the winter months, while six were seen on the Calgary Xmas Bird Count on December 19. On that same day and place thirteen Hairy and thirty-two Downy Woodpeckers were also seen. The Xmas Bird Count between Cochrane and Water Valley on January 2 showed seven Hairy and twelve Downy Woodpeckers, and also reported one Black-backed Three-toed and one Northern Three-toed Woodpecker. One Horned Lark was seen in Calgary on December 19, with the numbers rapidly climbing in January, and February, for the whole region.

Blue Jays were reported from High River throughout the winter months, with the highest count being four. At Cremona three were seen on December 28, and Calgary reported one on February 6 and March 13. In the Water Valley area five were seen on January 2, their Xmas Bird Count day. Between Water Valley and Cochrane thirty-six Common Ravens and four Common Crows were also sighted that day. At Aldersyde five Ravens were seen this winter, while sixty were reported from the Turner Valley area on February 12, and four at Black Diamond on February 6.

Black-capped Chickadee numbers, as established on the Xmas counts, were 322 in Calgary on December 19 and 157 in the Water Valley area on January 2, while the numbers were three and sixty-two respectively for Boreal Chickadees. Three Mountain Chickadees were seen near Exshaw on February 6. Up to five White-breasted Nuthatches were reported from Calgary this winter, while one was seen in High River. Two Red-breasted Nuthatches were reported from Calgary this winter, while four American Dippers were seen on the Xmas Bird Count in December. At least two American Robins overwintered in Calgary, and one

Varied Thrush was seen on February 18.

Although 10,359 Bohemian Waxwings were counted on December 19 in Calgary, the total numbers for the winter seemed to have been less than in previous years. The odd Cedar Waxwing was also reported. Evening Grosbeaks were not very abundant this winter, with the 153 counted on the Xmas Bird Count being the largest number reported this winter. Pine Grosbeak numbers were also low again, with the largest sighting coming from Turner Valley, where fifteen were seen on February 12. Twelve White-winged Crossbills on December 19 were the only ones reported from Calgary this winter. Common Redpolls were also not as numerous as in some other years, although flocks of up to 200 were seen near High River in January, and sixty near Herronton on January 29.

One White-throated Sparrow was reported from Calgary on February 2, while a single Song Sparrow wintered over at the Inglewood Bird Sanctuary in Calgary. A single Lapland Longspur was seen near Blackie on January 16, while Snow Buntings were reported from Herronton, Mazeppa, Calgary, and Delacour in flocks of a few to several hundreds throughout the winter.

More detailed tabulations for the winter period can be found in the winter and early spring issues of The Calgary Field Naturalist.

OVERHEARD (62)

Bird potheads

"These full-grown, flying goldfinches lost all fear after eating these seeds. Some could be picked up as they sat on a bush. They would lie quietly in our hands for minutes before flying ... It was another 30 years before I deduced the reason. These were hemp plants and in retrospect, I realized the goldfinches had become "stoned" on marijuana ..."

Lindsay A. Wotherspoon, 1976.
Blue Jay 34: 260-207.

1976 WESTERN CANADA RAPTOR BANDING UNDER R. RYFE [1.]

(Includes All Subpermittees)

NAME	CWS	SMITH	RAFUSE	CAMPBELL JOHN & NEIL	CAMPBELL KEITH	NICOLAI	MOSSOP	ERICKSON	SVRCEK	McCALL	PINEL	KINNAIRD	TOTAL
Goshawk	3			1									4
Sharp-Shinned Hawk	1												1
Red-Shouldered Hawk													
Cooper's Hawk			5	5		4							14
Red-Tailed Hawk	15		3	3		1					45	3	70
Broad-Winged Hawk													
Swainson's Hawk	200			3							29		232
Ferruginous Hawk	119	1		1							9	6	153
Marsh Hawk	17		1	5							6		29
Rough-Legged Hawk													
Osprey	3			4	4								11
Golden Eagle	26												26
Bald Eagle	17												17
Gyrfalcon							19						19
Prairie Falcon	317		45	40				24			4		430
Peregrine Falcon	45						4						49*
Merlins	108	15	28								1		152
Kestrels	2		3					2		3	10	4	24
Barn Owl													
Snowy Owl	1							1			2		4
Great Horned Owl	29		1	2	1	10			3		44		90
Hawk Owl												1	1
Great Grey Owl													
Long-Eared Owl						2		1			6		9
Short-Eared Owl													
Boreal Owl													
Barred Owl													
Saw-whet Owl													
Burrowing Owl								2					2
C. Raven	8												8
TOTALS	911	16	103	64	5	17	23	30	3	3	156	14	1345

1. Federal Permit No. 10,066

* Of which 29 were captive raised and experimentally released.

1976 WESTERN CANADA RAPTOR BANDING

Fyfe's Permit - Federal

NAME	QUE.	ALTA.	SASK.	MAN.	YUKON	NWT	TOTALS
Goshhawk		4					4
Sharp-Shinned Hawk		1					1
Red-Shouldered Hawk							
Cooper's Hawk		9	5				14
Red-Tailed Hawk		66	3	1			70
Broad-Winged Hawk							
Swainson's Hawk		232					232
Ferruginous Hawk		136	17				153
Marsh Hawk		22	1	6			29
Rough-Legged Hawk							
Osprey		8		3			11
Golden Eagle		24	2				26
Bald Eagle		11		6			17
Gyrfalcon					19		19
Prairie Falcon		380	50				430
Peregrine Falcon	4	32			4	9	49*
Merlins		120	32				152
Kestrels		18	6				24
Barn Owl							
Snowy Owl		4					4
Hawk Owl		1					1
Great Grey Owl							
Great Horned Owl		89	1				90
Long-Eared Owl		9					9
Short-Eared Owl							
Boreal Owl							
Barred Owl							
Saw-whet Owl							
Burrowing Owl		2					2
Raven				8			8
TOTALS	4	1168	117	24	23	9	1345

* Of which 29 were captive raised and experimentally released.

WESTERN CANADA RAPTOR BANDING BY MASTER PERMIT HOLDERS - 1976

NAME	BARRY,T. NWT	FYFE,R.	GEHLERT,B. ALTA.	HOUSTON,S. SASK.	JONES,E. ALTA.	LEIN,R. ALTA.	BURNS,R. ALTA.	TRANN,K. ALTA.	WHITFIELD ALTA/SASK		KUYT ALTA.	TOTAL
Goshawk		4			1			11				16
Sharp-Shinned Hawk		1			3			1				5
Red-Shouldered Hawk												
Cooper's Hawk		14										14
Red-Tailed Hawk		70		2	3	20						95
Broad-Winged Hawk								3				3
Swainson's Hawk		232		20		60	25					337
Ferruginous Hawk		153		27			7		35			222
Marsh Hawk		29		1								30
Rough-Legged Hawk												
Osprey		11		9								20
Golden Eagle		26		6								32
Bald Eagle		17								11		28
Gyrfalcon		19										19
Prairie Falcon		430		7		5						442
Peregrine Falcon	2	49									4	55*
Merlins		152		3								155
Kestrels		24	4	20		13					2	63
Barn Owl												
Snowy Owl		4										4
Great-Horned Owl		90		107	3				5			205
Hawk Owl		1	5									6
Great Grey Owl			3				5					8
Long-Eared Owl		9		3	4							16
Short-Eared Owl												
Boreal Owl			5									5
Barred Owl												
Saw-whet Owl			1		5			7				13
Burrowing Owl		2										2
C. Raven		8										8
TOTALS	2	1345	18	205	19	98	37	22	40	11	6	1803

* Of which 33 were captive raised and experimentally released.

Special credit should be given to the following individuals who due to their personal and extra effort assisted or banded the following:

A. CWS - refers to Canadian Wildlife Service employees, contractors, and private volunteers who worked together to band.

200 Swainson's Hawks -	165 by Joe Schmutz and assistants 35 by Harry Armbruster, Craig Brown
119 Ferruginous Hawks -	64 by J. Schmutz and assistants 55 by Armbruster, Brown and Paul
26 Golden Eagles -	all by Armbruster, Brown and Paul
17 Bald Eagles -	11 by Rick Beaver 6 by Julie Bauer and Ursula Banasch
317 Prairie Falcons -	all by Armbruster, Brown and Paul
108 Merlines -	88 by Tom Donald and Rick Jerema 20 by Armbruster, Brown and Paul
29 Great Horned Owls -	all by Brown and Paul
45 Peregrine Falcons -	16 wild birds banded by Richard Fyfe, Lizanne Johnston-Beaver, and Jim Windsor 29 captive bred young from Wainwright - raised by Phil Trefry and Hazel Hurtik

N.B: All 29 captive bred young were experimentally released by Armbruster, Fyfe, Tony Keith (CWS); Garry Erickson and Bruce Treichel (Alta. Fish and Wildlife); John Sr. and John Jr. and Neil Campbell (private volunteers).

B. The Saskatchewan Falconry Association - to the following private individuals who banded or assisted in banding at their own time and expense in Saskatchewan with subpermittee Bob Rafuse -- Lynn Oliphant and Paddy Thompson -- 103 raptors.

C. Private volunteers John Sr. and John Jr. and Neil Campbell who banded 64 raptors in the Calgary area at their own expense and time.

D. Subpermittee Harold Pinel and volunteer Dan Sikorski who banded 156 raptors in the Calgary area at their own expense and time.

NATURALISTS' BOOKSHELF (30)

Prairie birds in color. by Doug Gilroy. 1976. Saskatoon, Western Producer Prairie Books. vii + 113 pp.

After receiving this delightful collection of colour photographs of birds of the Prairie Provinces as a Christmas gift, I decided to bring it to the attention of readers of the Alberta Naturalist. This is not a book of facts, but rather a "coffee table" style picture book. The title is not entirely appropriate, as many species depicted (e.g.: Steller's Jay, Gray-crowned Rosy Finch) are not prairie birds, and many prairie species (e.g.: Sprague's Pipit, various sparrows, the longspur, etc.) are not included. However, this is a good album of birds which live in the Canadian Prairie Provinces. Most of the photographs are excellent, although the Western Kingbird is too yellow, and several are rather washed out, at least in my copy. The fall plumaged Harris' Sparrow was the worst offender in the latter category.

On the whole, the text is chatty, but pleasant and informative. Vignettes of the bird's behaviour, ecology, life history, conservation problems, or range changes are given for each photograph. Tips on photography are often included, as well as personal anecdotes, often involving other prominent Saskatchewan or other prairie naturalists. The text frequently verges on the anthropomorphic, but in most cases this does not detract seriously from the content. I did, however, find the statement about crew haircuts being in fashion among Western Grebes for thousands of years a bit irksome.

Most of the text is accurate, but a few errors have crept in. A photograph by Fred Lahrman of a hybrid Cinnamon X Blue-winged Teal is labeled as a Cinnamon Teal, although corrected in the accompanying text. The Horned Lark is not the only true lark in Canada,

although it is the only lark native to Canada. The Skylark has been established as a wild, breeding population in British Columbia for many years. The Common Nighthawk in the photograph is in an alert, not a resting posture. Waxwings are not new to prairie winters, as stated, but the context of the statement clearly implies it to refer correctly to Cedar Waxwings only. These errors are minor, and in most cases they are merely wording errors or overgeneralizations. A slightly more serious error is the reference to the Greater Snow Goose as a separate species from the Lesser, rather than a separate race of the same species. The statement that phalarope males are drab because they do all the incubation duties implies cause and effect that are unknown. On p. 44 a photograph to the left of the text is labeled to the right.

The book is an expansion of a 1967 book, "An album of prairie birds", and the author has not bothered to update the names. Thus the text explains that the Upland Plover is not a true plover, whereas the current name, Upland Sandpiper is not used. Similarly, the American Kestrel is still referred to as "Sparrow Hawk", Chen remains the genus of Snow Goose, Widgeon is spelled with the "d" included, and the juncos and Yellow-shafted flicker are named as full species. Even a country, "Dutch Guiana" is given by a long outdated name. A few errors in bird names also occur. "Coot" as a species name implies Fulica atra, a European species, where the American Coot is obviously intended. Western Meadowlark is misspelled "Meadow Lark", implying that it is a lark, although the text emphasizes that it is not. Nyctea and Circus are incorrectly given as "Nytea" and "Cicus."

The above errors are all minor in nature and do not seriously detract from the book. I wish Mr. Gilroy had reduced them by having an ornithologist check his text. Many "coffee table" bird books are now on the market, but few have the local flavour of this one. It is inexpensive and worthy of consideration as a gift for a prairie naturalist.

Martin K. McNicholl

NATURALISTS' BOOKSHELF (31)

No Trespassing. Private land, public recreation & the law. No date, but based on a Seminar of June 16-17, 1975 held by the Faculty of Forestry, University of Toronto and the Conservation Council of Ontario. Published by Conservation Council of Ontario, 6th floor, 45 Charles St. East, Toronto, Ontario M4Y 1S2. 55 pp., price not stated.

This little booklet is the proceedings of a seminar on land use problems in southern Ontario. As such, it is of a local nature in details, but the problems discussed are common to all areas of Canada, and thus of interest to naturalists in Alberta. Clive Goodwin summarizes the scope of the book both in his introduction and concluding summary. Basically the problem is that as southern Ontario becomes more densely populated, more land becomes private at the same time that more demand is made for various conflicting uses of this land.

Following Goodwin's introduction, is a paper by P. Hannam on "Today's pressures on the rural landowner." Next is a series of four papers grouped in the contents (but not in the text) under the general heading "Public Use and the Difficulties it presents: Areas of Concern." These are followed by four more papers, entitled "Ontario wildlife extension Program, Ancaster Township Agreement"; "Hidden Liability"; "Public rights - private land"; and "An alternative procedure for regulating development in rural areas." These are followed by three summaries of discussions at workshops concerning the "Areas of Concern" group of papers presented earlier. These discussions would have been better placed following each paper on which they were based. Finally, Goodwin's summary concludes the book.

Concerns and facts raised are frequently repeated in different papers. Landowners were once more willing to allow public access to private land than today, primarily because much of the public has abused priviledge of access. Damage to some property has been considerable, especially by snowmobilers, trail bike users and hunters. M.D. Kirk points our that snowmobiles and trail bikes are totally

incompatible with hikers and nature buffs, but no mention in all the hunting discussions is made of the fact that hunters and persons desiring to observe or experience nature undisturbed are also incompatible. A major problem is that landowners are legally responsible for the safety of people on their property - even trespassers. A strong feeling is expressed throughout the book that these liability laws need to be altered to some extent and that landowners must be compensated for use and abuse of land, and given incentives to preserve financially unproductive land that is of value in nature preservation. This is particularly important in view of that fact that public agencies cannot possibly purchase all land of value to nature preservation.

The book has few printing errors. I found four cases of two words run together, and two other typing errors. Most papers do not include references. Those that do have them listed under "Bibliography", implying a more complete reference list than exists. Two of these should have been "Literature Cited"; one "Further Reading" or "References."

There is little in this book we haven't heard before, but it is a useful, short compendium on a subject of growing concern to all naturalists. The classification of natural areas into preservation priorities outlined by P.F.J. Eagles in itself makes the book a useful addition to the conservationist's library. I recommend it as a general reference on an important topic. As pointed out by Goodwin (p. 54) it provides a good overview of the problem but no magic solutions.

Martin K. McNicholl

RECENT PUBLICATIONS ON THE NATURAL HISTORY OF ALBERTA (22)

Compiled by Martin K. McNicholl
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Edmonton, Alberta T6G 2E9

ANDERSON, P.K., G.E. HEINSOHN, P.H. WHITNEY, and J.P. HUANG. 1977.

Mus musculus and Peromyscus maniculatus: homing ability in relation to habitat utilization. Can. Journ. Zool 55: 169-182.

ANONYMOUS. 1977. Boxing day bird count. Red Deer River Nat. Newsletter Jan. 1977: 1-2.

ANONYMOUS. 1977. Varied Thrush sighting. Red Deer River Nat. Newsletter Jan. 1977: 2.

ANONYMOUS. 1977. This 'n that. Red Deer River Nat. Newsletter Jan. 1977: 4.

ANONYMOUS. 1977. Alberta Recreation, Parks and Wildlife Foundation. Nature Canada 6(1): 21.

ANONYMOUS. 1977. Stricter social control over pesticide use urged - Alberta report. Nature Canada 6(1): 22.

ANONYMOUS. 1977. National waterway desired. Nature Canada 6(1): 26.

BARRETT, M.W., and G.A. CHALMERS. 1977. Hematological values for adult free-ranging Pronghorns. Can. Journ. Zool. 55: 448-455.

BEMBRIDGE, B.D. 1977. Report of the Edmonton Christmas Bird Count. Edmonton Nat. 5: 38-42.

BETHEL, W.M., and J.C. HOLMES. 1977. Increased vulnerability of amphipods to predation owing to altered behavior induced by larval acanthocephalans. Can. Journ. Zool. 55: 110-115.

BILESKY, A. 1977. Black-capped Chickadee nesting in a birdbox. Edmonton Nat. 5: 58.

BRAY, O.E. 1976. Red-winged Blackbirds with green leg streamers. Inland Bird Banding News 48: 194.

BRIMACOMB, E. 1977. A winter meadowlark. Edmonton Nat. 5: 58-59.

BROWN, E., and E. BROWN. 1977. Sunday, December 5 - 9:30 - owl prowling. Calgary Field Nat. 8: 164.

BUTOT, R. The diving Mallards of Calgary. Calgary Field Nat. 8: 169; Corrections 8: 212.

BUTOT, R. 1977. Natural history observations - birds. Calgary Field Nat. 8: 181-188.

BUTOT, R. 1977. First substantiated record of the Black Scoter in Alberta. Calgary Field Nat. 8: 201.

BUTOT, R. 1977. Rare Curlew Sandpiper sighting in Alberta - Oct. 9, 1975. Calgary Field Nat. 8: 204-206.

BUTOT, R. 1977. Some uncommon shorebirds of the Calgary area 1963-1976. Calgary Field Nat. 8: 206-211.

BUTOT, R. 1977. Natural history observations - birds. Calgary Field Nat. 8: 215-220.

CARLYLE, W.T. 1977. Dr. Hugh MacGregor: a tribute. Edmonton Nat. 5: 59-61 (reprinted this issue).

CLAYTON, P. 1977. Nature Centre notes (6). Edmonton Nat. 5: 6-7.

CLAYTON, P. 1977. Nature Centre notes. Edmonton Nat. 5: 15.

CLAYTON, P. 1977. Nature Centre news. Edmonton Nat. 5: 57.

DABORN, G.R. 1977. The life history of Branchinecta mackini Dexter (Crustacea: Anostraca) in an argillotrophic lake of Alberta. Can. Journ. Zool. 55: 161-168.

DABORN, G.R. 1977. On the distribution and biology of an arctic fairy shrimp Artemiopsis stefanssoni Johansen, 1921 (Crustacea: Anostraca). Can. Journ. Zool. 55: 280-287.

EBEL, G.R.A. 1977. Faunal observations from Edmonton, Fort Chipewyan and other areas: Autumn (August to November) 1976. Edmonton Nat. 5: 68-76.

FINLAYSON, S. 1977. Sunday, January 15 - Jr. Field Naturalists snow-shoeing trip to the Fish Creek Provincial Park. Calgary Field Nat. 8: 166-167.

FISHER, B.M. 1977. Natural history observations - other than birds. Calgary Field Nat. 8: 179-180.

HOLROYD, G.L. 1977. (Bow Valley Naturalists Christmas bird count). Bow Valley Nat. Newsletter 1977 No. 1: 1-2.

KRISTENSEN, J. 1977. The Goldeye - a local anomaly. Edmonton Nat. 5: 28-30.

LORE, M.S. 1977. Corrections page. Red-headed Woodpecker (Melanerpes erythrocephalus). Calgary Field Nat. 8: 212-213.

MAITLAND, V.R. 1976. A plea for the Coyote. Buffalo Lake Nat. Newsletter 4:2 (Reprinted Calgary Field Nat. 8: 211, 1977).

MAITLAND, V.R. 1977. Christmas bird counts. Buffalo Lake Nat. Newsletter 5: 32.

McNICHOLL, M.K. 1976. Recent reports of cannibalism and scavenging in raptors. Raptor Res. Found. Ethology Inform. Exchange No. 4: 6.

McNICHOLL, M.K. 1977. Observations of House Sparrows "hawking" insects. Calgary Field Nat. 8: 170 & 188.

McNICHOLL, M.K. 1977. A habitat note on Clay-colored Sparrows in Edmonton. Edmonton Nat. 5: 30-31.

McNICHOLL, M.K. 1977. A Mew Gull in downtown Calgary. Calgary Field Nat. 8: 202-204.

MEREDITH, D. 1977. Mammal observations / spring and summer 1976. Edmonton Nat. 5: 61-63.

NARAYANA, T.V. 1977. Alberta avian checklist - by continents. Edmonton Nat. 5: 18-27.

NORDSTROM, W.R., and J.R. BUTLER. 1977. Rosy Finch roost. Nature Canada 6(1): 25 (Abridged from Alberta Nat. 6: 105-107, 1976).

OFFEN, M.(C). 1977. A letter of appreciation and historical notes. Calgary Field Nat. 8: 199.

PENDLEBURY, G.B. 1976. The Western Hognose Snake, Heterodon nasicus nasicus in Alberta. Can. Field-Nat. 90: 416-422.

PLETZ, H. 1977. Purple Martin - a second clutch of eggs. Edmonton Nat. 5: 16.

PODLUBNY, J. 1977. Sunday, January 2 - Wildlife Reserve of Western Canada. Calgary Field Nat. 8: 164-165.

SLATER, A. 1977. Willow and Alder Flycatcher in the Highwood Valley. Calgary Field Nat. 8: 170.

SMITH, E. 1976. Timely topics: the bluebird trail. Buffalo Lake Nat. Newsletter 4: 1-2.

STILES, D. 1977. Sunday, January 9. Calgary Field Nat. 8: 165.

THORMIN, T. 1977. Spring weather, butterflies, owls etc. a request. Edmonton Nat. 5: 67.

VAN ECK, P.I. 1977. Christmas bird counts. Devon, Alta. Edmonton Nat. 5: 32.

VITT, D.H., and R.E. ANDRUS. 1977. The genus Sphagnum in Alberta. Can. Journ. Botany 55: 331-357.

WESELOH, D.V. 1977. The Wabamun Lake Christmas Bird Count: 1976. Edmonton Nat. 5: 33-37.

WESELOH, D.V., L. BOGAERT, and J. KEISER. 1977. Peregrine Falcons hunting at Beaverhill Lake. Edmonton Nat. 5: 8-9.

WINBERG, L.A., and L.B. KEITH, 1976. Experimental analyses of dispersal in Snowshoe Hare populations. Can. Journ. Zool. 54: 2061 - 2081.

WISELEY, A.N. 1977. Faunal observations: summer (June-July) 1976. Edmonton Nat. 5: 64-66.

LETTERS TO THE EDITOR

"My husband and I are members of the Federation of Alberta Naturalists and, until we moved to Winfield, were members of the High River Naturalist Society. At the moment we are not affiliated with a local club. Our problem is this. What do individual members of FAN do to report bird and animal sightings, nesting records, plant records and the like?

Is there some way that, once a year, the Alberta Naturalist could print a list of the type of information being gathered and the name and address of the person/persons doing the gathering? We have been keeping records of flora and fauna here on our farm for some time now and wondered if anyone needed any of this information for their projects. A list would enable us to share with those interested. We live in a fairly isolated, heavily wooded area southeast of Winfield.

I sometimes feel that the Alberta Naturalist forgets that not all the readers have been members for years and assumes everyone knows all the procedures. For example, printing procedures for Bird Count Days occasionally would help new members and remind older members.

We enjoy the magazine and find the articles interesting. Thank

you for your time."

Mr. & Mrs. C.R. Harrowing
Winfield, Alberta.

EDITOR'S NOTE: FAN has three official projects which fall in the scope of the above letter. The first is the plant phenology study, for which forms are available from Dr. C.D. Bird, Dept. of Biology, University of Calgary, Calgary, Alberta. The second is the May species count Day, and the third is the Alberta Ornithological Records Committee, which accepts not only rarity reports, but also list of birds in a given area. Forms for the latter two projects are available from Dr. D.V. (Chip) Weseloh, Provincial Museum, Edmonton, Each of these committees is required to publish a report annually in the Alberta Naturalist in which the purpose and some instruction are given, additional details being available from the person in charge. Chip had an article on the form and function of the A.O.R.C. in a recent issue. In addition, Chip is organizing the annual Christmas Bird Count on a more formal scale for Alberta (see his report in this issue). Nest records should be reported to the Prairie Nest Records Scheme, c/o Herbert W.R. Copland, Manitoba Museum of Man and Nature, Winnipeg, Manitoba (see article in this issue). Individual animal and plant records in the Calgary area should be reported on cards available from the Calgary Field Naturalists' Society, Box 981, Calgary, Alberta; and in other parts of the province on cards available from Chip Weseloh of the Provincial Museum. The cards are not FAN projects, but should be supported by FAN members. The annual reports of these projects are intended to report their progress and keep our members informed of them. Instructions are included on or with the forms or cards involved. The committee involved with each is expected to ensure that this is done annually, and to date they have been very cooperative. We hope that annual reports coming from the Prairie Nest Records Scheme will be available for publication of the Alberta portion in the future. -M.K.M.

"I enjoy receiving and reading your publication very much. A very informative booklet. Keep up the good work."

D. Walton, Olds, Alberta

"I would like to compliment you on the latest issue of the A.N. I like the new "type" very much and look forward to the next issue with photographs. I think this will promote a great deal more interest among club members and prompt them to submit some.

Your guide to typists, authors, etc. was just great! and will be a tremendous aid to me, especially the correct usage and spelling of the species, names, etc. of birds."

Virginia Maitland, Stettler, Alberta, Editor Buffalo Lakes Nat. Club Newsletter.

FAN NEWS, PROJECTS, REPORTS

From the Minutes of the Sixth Annual General Meeting, Twenty-first Regular Meeting, Board of Directors, and Sixth Annual Meeting, Board of Directors.

Naturalists' Guide -- John Powell reported that about half the text had been written. FAN and museum curators will be reviewing the manuscript before final editing. Lloyd Lohr, Charles Bird and John Powell were appointed to a reviewing committee for FAN, with Martin McNicholl as alternate.

Life Membership -- Written notice of motion was not sent to Directors and Corporate Clubs previous to the meeting, so this item has been tabled for the May meeting.

Great Horned Owl Crest -- have been prepared and will be sold by Corporate Member Clubs, with profits to the Corporate Club and

FAN. Complimentary copies were presented to Premier Peter Lougheed, Hon. Horst Schmidt, Hon. Al Adair, the four original executive members of FAN (Ian Halladay, Tim Myres, Helen Schuler, and Dave Spalding), FAN Patron Hon. Dr. J.W. Grant MacEwan, and FAN honorary members: Dr. J. Dewey Soper, Dr. Kerry Wood, and Prof. W. Ray Salt. 10 copies were also sent to Marg Reine of ENHC for arranging and suggesting the project and the crest's designer, Terry Thormin. See below for reactions of two recipients.

Bucks For Wildlife -- The annual FAN membership fee is to be raised to $4.00 effective 1 January 1978, with $1.00 from each membership to go to the Bucks for Wildlife Fund.

Owl Magazine -- FAN will become affiliated with the Young Naturalists Foundation, and thus involved in promotion of Owl magazine.

Future Meetings -- May 21-23, Drumheller; July 16-17, Grande Prairie.

Corporate Membership -- The Northern Alberta Naturalists' Club was not yet ready for a formal application. They will host the summer meeting and hopefully soon join us. The Alberta Speleological Society applied for membership and was accepted for a two-year period during which time both it and FAN will assess the form this relationship would best take. This motion was signed by all members of the Board present, and will be circulated to others. Thus, I assume that by the time readers see this, we will have a new Corporate Member. WELCOME!

Nominations -- The following officers and committee chairpersons were elected:

President - Dorothy Broadbent

Vice-President - Lloyd Lohr

Secretary - Graeme Greenlee

Treasurer - Jack Park

Editor - Martin McNicholl, Associate Editors - to be appointed by the Editor

E.C.A. Public Advisory Committee: Representative - John Powell

Chairman, Parks and Natural Areas Committee - Mike McIvor

Chairman, Endangered Species Committee - Bob Fisher

Chairwoman, Environmental Education Committee - Mary Lore

Chairman, Publications Committee - Martin McNicholl

Chairman, Publicity Committee - Geoff. Broadbent

Chairman, Finance Committee - Jim Minty

Chairman, By-Laws and Resolutions Committee - Frank Harper

Chairman, Research Committee - Charlie Bird

Chairwoman, Land Use Committee - Dorothy Broadbent

C.N.F. Representative - Mary Lore

I.C.B.P. Representative - Bob Fisher with Mary Lore alternate

Owl Crest -- Mary Lore, President, Calgary Field Naturalists Club, and Chairwoman, FAN Environmental Education Committee, sent us the following reactions to the Owl crest:

Dr. M.T. Myres, original President, FAN:

> "Owl,
> Associated with Athene (Minerva). It became a symbol of wisdom and is a common attribute of the goddess "perhaps perched on a pile of books." Minerva personified Wisdom.

Hon. Dr. J.W. Grant MacEwan, FAN Patron, Former Lt. Gov. of Alberta, Chairman of the Board, Alberta Historical Resources Foundation:

> "May I repeat my real sense of pleasure from the note you sent, notifying me that your association had decided to present me with a Great Horned Owl crest. I shall be thrilled and honoured, and my only disappointment is in my inability to be present. An earlier engagement takes me to Cochrane at the hour of your meeting but Phyllis MacEwan, I am glad to think, will be present and will accept on my behalf. She too is a pretty good "birder"

and she too, I suspect, is beginning to find birds a rather refreshing change after an overdose of humans now and again.

My warmest wishes as well as my sincere thanks to all the Nature-loving members of the fraternity."

Committee Reports -- Reports were circulated by the Chairpersons of the Land Use, Finance, Wilderness, Parks and Recreation, and Publications committees. As these reports are lengthy in total, and the FAN Board will be considering the formation of a newsletter at the May meeting, I have omitted them here. No reports were given by the other standing committees, but additional reports were given by the ECA-PAC Representative, Fish and Wildlife Advisory Council Representative, and Alberta Ecological Survey Representative.

A Note from the Retiring Editor -- Less than one week prior to press time, the Editor accepted a position in Ontario to commence this summer. Thus, I find it necessary to resign both as Editor of the Alberta Naturalist and as Chairman of the Publications Committee. I have enjoyed my term of office, and have been gratified to see the growth in submissions to this journal. With deadlines necessarily extending further back in time, I believe that serious consideration will have to be given to forming a separate, more timely newsletter to announce FAN news (FAN meeting times are often not set until well after we have gone to press), Club news, Conservation News, and Notes & News. This would leave the Alberta Naturalist for feature articles, reviews, and recent literature listings. Whatever path is taken, I trust readers and authors will co-operate with the new Editor(s). I have enjoyed working on the Executive of FAN, EBC, and ENHC, as well as my warm reception in Calgary over the past winter. Many thanks to all concerned. Although I have a successor to recommend, this must be ratified by the Board in May, so will be announced in the September issue, my last. -M.K.M.

PRESIDENT'S PAGE

by Dorothy Broadbent
R.R. #4, Red Deer, Alberta

The winter Annual General Meeting and the 21st Regular Meeting were combined with a Leadership Seminar at Camp Caroline in February. About 50 people took part in the Seminar designed to help naturalists pass on their knowledge to the general public especially the young people.

Elizabeth Hall gave an impressive demonstration of her 'Five Strand" technique for teaching nature appreciation. Everyone tried out her methods by pretending they were the students. We learned to use all our senses to appreciate nature. Learning about nature became fun and suddenly all the serious naturalists realized that one can know a lot about nature without even knowing the name of one tree or one bird.

We went out in groups and picked places to study, we noted the colours we saw, the textures we could feel, the sounds and scents around us and some of the braver ones even tasted nature. We imagined how the area looked in the past and how it would change in the future. Some of the more adventerous participants were blindfolded so they could practice observing through other senses. We all had a great time discovering how much more we could observe when we paid attention to every detail with every sense. Fortunately Camp Caroline is private and secluded. I doubt Liz would have stimulated such enthusiastic responses from us if we had been practicing in a more public place.

Jim Butler, from Provincial Parks, talked about how to interest the public in nature and the environment. Jim stressed that we must instill in our children an awareness, love, reverence and understanding of the natural world so they will be motivated to preserve it. Many of our young people are now raised in an artificial environment, isolated from the natural world. The woods, fields and ponds have been replaced by playgrounds, sports and T.V. Young people taken out of their comfortable and familiar urban environment are afraid of the wilderness and the wild creatures. This fear may be reflected

in violence and they will destroy that which they fear.

Our survival depends upon the attitudes of our young people, our youth must enlighten a society so absorbed in itself that it is unable to see or understand the ecological balances that exist within the laws of nature. Time is running out. We have perhaps ten years left in which to teach our young people to develop a life style in harmony with nature.

Jim concluded his talk with an excellent slide show of Alberta's newest Provincial Park.

Dick Pharis, Past President of the Alberta Wilderness Association, spoke about ways of keeping up to date with all the environmental concerns. He gave a list of the publications available to the environmentalist.

Thanks to Liz, Dick and Jim for making the weekend so interesting and educational. I have tentatively booked Camp Caroline for the weekend of March 10-12 next year. I would appreciate your opinions on whether we should hold another meeting there. The cost is $35.00 for adults and $18.00 for children for two nights accommodation and meals. The name does not adequately describe the modern buildings, equipped with indoor games and heated pool. It is situated in the foothills west of Innisfail on 320 acres of rolling hills and forests. Wildlife is plentiful. Even Wolverine tracks were observed. We are anxious to involve more of our membership in our weekend field trips, so please contact me with your comments.

The Sixth A.G.M. was also held at Camp Caroline. The Executive was re-elected for another term of office. Some of the old Committee Chairmen remained in office, others were replaced by new faces. Bob Fisher has taken over Endangered Species, Geoff Broadbent was appointed Chairman of the Publicity Committee in his absence; an appointment he has wisely decided to accept, being well aware of the consequences of disagreeing with the cook. Mary Lore has taken over from Joy Finlay as Chairman of the Environmental Education Committee. Joy is no longer an Appointed Director of FAN. She has faithfully served the Federation for a number of years and all the Directors past and present thank her for her dedication.

I hope all our committees can really be active this year but they depend on input from the general membership. If you have a particular concern or can assist on a committee, please phone the appropriate chairman.

The 16th Regular Meeting was held after the A.G.M. John Powell reported that half the text for 'The Naturalists Guide' has been completed. A Committee composed of Lloyd Lohr, Charlie Bird and John Powell has been appointed to review copies of the manuscript.

The FAN crests depicting the Provincial Bird are now on sale at two dollars each.

Effective January 1, 1978, FAN membership will be raised to $4.00, the extra dollar will be donated to the 'Buck for Wildlife Fund.' The Directors are very disturbed that little money is presently coming from the Government for habitat improvement for non-game species and that it is urgent to improve habitat for these species.

FAN has decided to become affiliated with the Young Naturalists Foundation and will become involved in the promotion of the 'Owl' magazine.

The Alberta Speleological Society has agreed to become a Corporate member of FAN for a two year period. By that time we hope to set up an Affiliate membership to accommodate specialized groups within the Federation.

Mike McIvor reported that the Environment Conservation Authority and the Banff School of the Environment are jointly organizing a National Conference on Citizen Participation, to be held October 4 to 7 at the Banff Centre. The object is to achieve a comprehensive coverage of the state of the art of public participation in Canada. They are now calling for papers.

The next FAN meeting will be a summer field trip, July 16 and 17 to Grande Prairie to visit our newest naturalist club and the Trumpeter Swans.

Dick Pharis supplied the following list of environmental publications:

The Alberta Wilderness Association Newsletter
Box 6398, Station "D"
CALGARY T2P 2E1

Sierra Club Bulletin
1050 Mills Tower
SAN FRANCISCO, California

Friends of the Earth
529 Commercial Street
SAN FRANCISCO, California 9411

The Living Wilderness
Wilderness Society
1901 Pennsylvania Avenue, N.W.
WASHINGTON, D.C.

High Country News
Box K
LANDER, Wyoming

Foothills and Wilderness Journal. Alf Skasting
209 MacEwan Hall
University of Calgary
CALGARY

OVERHEARD (63)

Advice for the nesting season

" ... please remember: always put the birds' interests first. Keep away if a visit might endanger the nests."

Colin Harrison, 1975
"A field guide to the nests, eggs and nestlings of British and European birds", p. 418.

CLUB NEWS

Bow Valley Naturalists:- Newsletter #2, 1977 reports the new Executive, elected in February: President - Geoff Holroyd; Vice-President - Dave Kraby; Secretary - Nancy Murray; Treasurer - Janet Amy. Two indoor programs were announced. Ian Jack was to speak on April 13 on a proposed diversion of the Kootenay River into the Columbia, and the excellent Werschler-Wallis program, "Before the Deluge" was to be featured at the April 27 meeting. Weekly short evening field trips in the Vermilion Lakes area were planned for the summer, featuring reptiles and amphibians on Thursdays, birds on Tuesdays, mammals on Tuesdays and Thursdays, and plants on an unspecified day.

Buffalo Lake Naturalists:- No new information at press time, but Virginia Maitland, Newsletter Editor, informs me that the newsletter will be coming out on a new schedule.

Calgary Field Naturalists' Club:- Membership now stands at 322 (adults, family and juniors).

Earl Brown's Owl Prowl to sight 7 Snowy Owls on a Sunday, December 5, poor visibility and somewhat chilly, drew an attendance of 19 adults and 15 of junior age.

The Christmas Bird Count of December 19 was a day with poor visibility, but it was a good day despite the fact that the species count was 40 compared to 47 of last year and the handicap of 2 gave the Edmonton Bird Club with 39 species, the trophy for the year. Ian Halladay organized the count.

The Wildlife Reserve of Western Canada of January 2 was organized by Jamey Podlubny and accounted for 33 species.

The Wonderful World of Botany of the Mountains and Foothills of Western Canada presented by Mary and Bob Smith of Seebe and members of the Bow Valley Naturalists, is a superb representation and was enjoyed by approximately 150 members at the January 19 meeting.

Future meetings on third Wednesdays will be Martin McNicholl with Birds of the West Coast on February 16; Dr. Richard Pharis of the A.W.A. on March 16; and "The Way of a Trout" and "Whooping Crane"

possibly for April 20.

Our Natural Areas division are concentrating on an educational program of information and appreciation of nature's inventory.

Botany and Mammal study groups are active.

It seems more emphasis must be placed on the importance of the individual speaking out concerning the environment on issues which are subject to political decisions.

It was stated at the last executive meeting that it should be made clear that naturalists do enjoy the objects of the environment but naturalists do not consume it. Financial support for areas which provide habitat could be forthcoming provided it is possible to learn if specific areas have actually been provided by dollars to such funds.

Several field trips are enjoyed by members each month and the Junior Naturalists, 66 plus 23 adults, enjoyed snowshoeing on January 16, -26°C.

Submitted by Mary S. Lore
President, January 31, 1977

Edmonton Natural History Club:- Indoor meetings announced in the Edmonton Naturalist were "Parasites and predators" by Dr. J.C. Holmes on 8 February, "Amphibians and reptiles of Alberta" by Dr. Vic Lewin on 8 March, and "Pika communication and social behaviour by Dr. Lew Kline on 12 April. A bird banding workshop was held in February, and butterfly workshops in February through April. Field trips were for animal tracks in the snow in February, Wagner bog for owls in April, and Beaverhill Lake in April.

The ENHC is pleased to report brisk sales of the FAN Great Horned Owl crests and hopes that other clubs are enjoying similar success.

The Club would like to extend an invitation to FAN members to participate in our spring and summer field activities. The schedule is as follows:

May 28th & 29th	May Day Count
June 5th	Genesee Fossil Beds
June 11th & 12th	Wolf Lake

June 25th & 26th	Dinosaur Provincial Park
July 9th	Dowling Lake
July 23rd & 24th	Cardinal Divide

August trips will be arranged later.

For futher information contact Terry Thormin at 482-2831, or Marg Reine at 435-6010.

High River Naturalists Society:- Kim Kerpan sent some information to Lyman Matthews along with the corporate member dues. The Executive consists of: President - Lorin Hettinger; Vice-President - Jack Shier; Secretary-Treasurer - Kim Kerpan; FAN reps. - Marie Goodfellow and Kim Kerpan. Dues are $2.00 per year, and membership stands at 8.

Lethbridge Naturalists' Society:- Lynn Richards sent the following report, "In November a Cypress Hills Provincial Park Planning Hearing was held in Lethbridge. This hearing was well attended, with many briefs, covering a wide range of topics and feelings, presented. Our brief was presented again at this time.

December brought with it Christmas and our activities slowed down. However, several of our members took part in the Christmas Bird Count.

Things are getting under full swing again (January). The L.N.S. is heading up a group with public schools, college, university and other River Valley Park users to co-ordinate efforts on development of a nature centre. We are waiting for the government's next move on the issue of flow regulation for the Oldman River.

The L.N.S. is becoming involved in the controversy over the Middle Sand Hills of the Suffield Military Reserve. Medicine Hat cattlemen are attempting to open the Sand Hills to permanent grazing. This land has already been badly abused. It is a beautiful area, one of the last examples of its type which is still intact. Thus, we hope it will be considered for a wildlife refuge.

We hope to try a couple of winter outings this year, and possibly in later years."

Red Deer River Naturalists:- Their newsletter report, a February 24 meeting on "Caves of Alberta" by Ian Drummond and a March 24

meeting on "Environmental Agriculture" by Alvin Goetz.

CONSERVATION NEWS

Pipeline: Environment loses first rounds:- From Pipeline Update No. 18, January 17, 1977 comes the sad news that a U.S. Federal Power Commission staff brief favoured the Canadian Arctic Gas route for transporting Prudhoe Bay Gas to the "lower 48" of the U.S. Worse yet is a report in the Edmonton Journal of February 1, 1977 that Judge Naham Litt also favours this route, generally considered to be the most damaging environmentally. The Federal Power Commission has next to approve or disagree with Judge Litt's report, and President Carter has final say, but the outlook is decidely bleak at present.

Pipeline Update No. 19, January 31, 1977 reports that the National Energy Board hearings could well end by April 30, and that a decision on whether or not to build the MacKenzie pipeline will likely be made this year, although perhaps not finalized until 1978.

According to Pipeline Update No. 21, February 28, 1977, one of Judge Litt's objections to the Alcan plan was the size of existing pipelines through Alberta and B.C., which were to be used. Therefore, Foothills Pipelines (one of Northwest's Canadian partners in the plan) has filed a counter proposal to build a larger diameter pipeline next to existing lines, rather than using the lines themselves.

U.S.A. and U.S.S.R. sign bird treaty:- A treaty for the conservation of migratory birds and their environments was signed in Moscow on 19 November 1976. According to the American Ornithologists' Union Ornithological Newsletter No. 2, the treaty includes many new concepts, primarily related to environmental protection, not included in previous treaties between the U.S.A. and other countries. As Canada shares many species that migrate between the two "super-powers" this new treaty is of obvious importance here. More than 200 species in 36 bird families are specifically covered in the new treaty.

Endangered and threatened wildlife:- An updated list of endangered and threatened wildlife was published in the U.S. Federal

Register of 27 October 1976, and is available from the Director, U.S. Fish and Wildlife Service, Washington, D.C. 20240.

Federal Conservatives Committed to more growth:- In a "Report from Parliament" by Harvie Andre, M.P., Calgary Centre of February 1977 P.C. Leader Joe Clark is quoted as saying, "Our first economic priority is a commitment to growth."

Alberta Recreation, Parks and Wildlife Foundation:- An encouraging move on the part of the Alberta legislature was the formation of a foundation to acquire and preserve nature sites of ecological significance in Alberta. Nature Canada 6(1): 21, 1977 reports that Xerox of Canada donated $25,000. to the Foundation in support of a land conservation program in the Buffalo Lake area.

Ecological Reserves:- A report in Nature Canada 6(1): 22, 1977 notes that the work of the now defunct I.B.P. in Canada will be assumed by an eleven-member committee of the National Research Council. The committee is chaired by Dr. William A. Fuller, Dept. of Zoology, University of Alberta, Edmonton, Alberta T6G 2E9. He welcomes feedback from naturalists interested in the proposed ecological reserves.

Canada Poor in Energy Conservation:- According to Nature Canada 6(1): 27, 1977, the International Energy Agency has ranked Canada, the U.S., and Switzerland as the three worst conservationalists among its 18-member nations.

New National Park Planning Process Works for Environment on First Round:- The new reviewing process for National Parks master plans reviewed in this column concerning Elk Island in the December 1976 Alberta Naturalist has resulted in a pleasing plan for Riding Mountain National Park in Manitoba, according to the March 1977 Bulletin of the Manitoba Naturalists Society. The plan leaves 85% of the park in a wilderness state, adds to new roads, and downgrades the existing higher through the park to a slower speed road! This is good news, indeed, and we certainly hope the Elk Island plan will turn out as well for the environment.

NOTES AND NEWS

Gwen Goulden Marries:- The Editor was extremely pleased to receive an invitation to the wedding of Gwen Goulden and Victor McCauley to take place on 26 February 1977 in Ottawa, Ontario. Gwen, widow of the late Loran L. Goulden, was not only a strong support to Loran's work, but has in her own way contributed substantially to work of Alberta's nature organizations. She was Secretary for FAN, and Editor of the Edmonton Naturalist, and continues to serve as a member of the Loran L. Goulden Memorial Awards Committee. I am sure that naturalists throughout Alberta will join me in wishing Gwen and Victor much happiness for the future.

Corrections to Banff Christmas Counts:- Geoff Holroyd has sent the following corrections to the 1975 Christmas Bird Count for Banff-Canmore (Alberta Naturalist 6: 81, 1976): add House Sparrow 364
Brewer's Blackbird 1
Evening Grosbeak 21

Species total: 39

Thus, the 1975 figure for Banff in Table 1, p. 255, Alberta Nat. 6, 1976 is correctly 21, not 0. In addition the 1974 figure in the same table should read 0, not 250.

N.P.P.A.C. (Alberta):- The February 1977 issue (Vol. 8, No. 5) of the Newsletter of the Edmonton Chapter of the National and Provincial Parks Association of Canada reports that the two Alberta chapters (the other being the Calgary-Banff Chapter) have formed a single Alberta society, incorporated under the provincial Societies Act. Each chapter will continue to operate separately, but will apply for grants as a single society. A pro tem Executive consists of: Ross Hodgetts (Edmonton) - President; Liz Neil (Calgary-Banff) - Vice-President; El Slouch (Edmonton) - Secretary; Jim Good (Calgary-Banff) - Treasurer.

Canadian Conference for Nature 1977:- The Canadian Nature Federation's 1977 Annual General Meeting will be held in Regina, Saskatchewan August 24-26, 1977. According to Nature Canada 6(1): 1977,

the theme for this year's symposium will be "Nature and Change on the Canadian Plains." Field trips before and after the conference are planned. Albertans should be especially interested in this program. Further information can be obtained from The Saskatchewan Natural History Society, Box 1321, Regina, Saskatchewan S4P 3B8.

Clarence Tillenius in Calgary:- From the Calgary Field Nat. 8: 200, 1977, we learn that renowned Canadian nature artist Clarence Tillenius was in Calgary on 13 January 1977 to give a talk on nature artists through the ages at the Glenbow Art Gallery.

Changes in CNF Staff:- The Canadian Nature Federation has recently hired an Environmental Specialist, Mr. Richard Pratt. However, Dr. Theodore Mosquin has resigned as Executive Director, effective February 20, 1977, and Arnet Sheppard will be Acting Editor of Nature Canada (letter, CNF President Martin Edwards to Board of Directors February 22, 1977).

New Film on Whooping Crane:- An advertisement inside a letter acknowledging the Editor's 1976 banding forms (!) announces a new film, "A great white bird" about the Whooping Crane. The film was co-sponsored by the Canadian Wildlife Service and U.S. Fish and Wildlife Service, and was to be shown on CBC TV April 7, 1977.

Dipper Sighting:- "A Dipper (Cinclus mexicanus) was observed on January 12, 1977 while feeding in an ice free section of Copton Creek, elevation 4,000 feet, location - 54° N 07' North and 119° 15' West (section 29 - township 59 - range 9 - west of the 6th meridian)." Knut Moller, Alberta Recreation, Parks and Wildlife, Fish and Wildlife, Bag 900, Peace River, Alberta TOH 2XO.

Ministik Hills Field Study Centre:- Dr. Lois Fenna has sent a notice of a nature camp for 10 to 13 year olds to be conducted at Ministik Hills Field Study Centre, two miles south of Hastings Lake, 8:00 p.m. (Monday) July 18 to 4:00 p.m. (Thursday) July 21. A fee of $24.00 includes full board and lodging plus a program of scientific activities. Accommodation is dormitory-style in six-bunk cabins. Interested parents are asked to send a $10.00 booking fee, deductible

from the total cost to Dr. Lois Fenna, Ministik Hills Field Study Centre, R.R. #2, Tofield, Alberta TOB 4JO, with name, sex, age and address of the child. This is an excellent opportunity to have your child instructed in ecological principles in a natural setting by good instructors at low cost.

Two weekend courses for adults are also planned, sponsored by the University of Alberta, Faculty of Extension. The first is June 17-19 (probably too early for our readers to enroll) on Ecology; the second July 29-31 on insects. Information can be obtained from Lois at the above address.

REQUESTS

Nature Guide:- The Tahoma Audubon Society, 34915 Fourth Avenue, S., Federal Way, Washington 98003, publishes a list of persons willing to serve as guides to visiting naturalists - by letter, phone, or in person. More persons are needed from Canada, and volunteers are asked to write them.

Beaver sales to trace Peter Fidler route:- Peter Fidler may have been the first European to see southern Alberta. Students from "Trek" at Hamilton Junior High School, 429 - 15th Street, South, Lethbridge, Alberta, are tracing his history. The Hudson's Bay Company has agreed to allow these students to sell subscriptions of the Beaver on a 50% commission basis to raise funds for their project. Interested persons should contact the school. The Beaver is an excellent Canadian magazine featuring historical and nature articles.

Franklin's Gull colonies in Alberta:- A book is now in preparation on larids and jaegers in Alberta. Information is needed on past and current locations of Franklin's Gull colonies within the province. Please send information to:

Dr. D.V. (Chip) Weseloh
Natural History Division
Provincial Museum of Alberta
EDMONTON, Alberta.

Note on Christmas Bird Counts, 1976:- Dr. Weseloh's report on Christmas bird counts in Alberta was not quite ready at press time for this issue, so will appear in the September issue.

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Deadlines for submission of material to the Editor are: February 1, May 1, August 1 and November 1. Please include your address. All maps, charts, etc., should be submitted on white paper, of the appropriate size for publication, preferably done in type and/or india ink.

FAN membership fees are $3.00 per year regular, $10.00 supporting, tax deductible ($7.00 worth). Mail remittance to: Federation of Alberta Naturalists, Box 1472, Edmonton, Alberta T5J 2N5.

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